

For many years, the capacity for change and progress in the country was equated with its capacity to reproduce the Western type of social institutions, services and values. Nowhere has this been more true than in the area of health. In recent years, however, the dismal health situation has brought about the realisation that such an approach to development has proved to be counter-productive. Even as some of the achievements of the last 30 years are significant, the failures of the imported, topheavy, centralised, elite-oriented model of healthcare delivery, loom large. Understandably, then, there is a serious concern and search for alternative models.

The report of the study group set up jointly by the Indian Council of Social Science Research and the Indian Council of Medical Research is an exercise in this direction. The group, constituted by the ICSSR under its programme of studies on "Alternatives in Health", under the chairmanship of Dr. V. Ramalingaswamy, brought together specialists in the field of medicine, nursing and health care to study various aspects of delivery systems and to suggest changes to improve the health status of the people. Two publications in this series have already appeared as a result of this joint venture which began about five years ago. The present report is the third in the series.

The report presents an alternative model of health care services with a 20-year perspective to ensure health for all by the year 2000 A.D. The alternative model—democratic, decentralized, participatory and economical—seeks to integrate preventive and curative functions and to combine the best elements in the tradition and culture of the people of India with modern science and technology. In focussing on a comprehensive national policy of health and a new operational strategy, the report is intended to be a basic document to initiate a nation-wide debate on the subject as well a positive action towards certain radical changes to correct the present imbalances in our health care system.

Rs. 18

HEALTH FOR ALL

AN ALTERNATIVE STRATEGY

INDIAN COUNCIL OF SOCIAL SCIENCE RESEARCH
AND
INDIAN COUNCIL OF MEDICAL RESEARCH

HEALTH FOR ALL

AN ALTERNATIVE STRATEGY

Report of a Study Group
Set up Jointly by

the Indian Council of Social
Science Research and
the Indian Council of
Medical Research



INDIAN INSTITUTE OF EDUCATION

Contents

	PAGES
Foreword	i—ii
Members of the Committee	iii
Secretariat of the Committee	v
Major Recommendations	vii—xv
I The Approach	
1 Wanted: An Alternative National Health Policy	3—15
2 Health, Development and Family Planning	17—34
II Supportive Services	
3 Nutrition	37—52
4 Improvement of the Environment	53—66
5 Health Education	67—77
III The Alternative Model: General Principles and Organisation	
6 The Alternative Model: General Principles	81—102
7 The Alternative Model: Organisation	103—127
IV The Alternative Model: Some Specific Aspects	
8 Health Services for Women and Children	131—140
9 Control of Communicable Diseases	141—154
10 Personnel and Training	155—173
11 Drugs and Pharmaceuticals	175—186

Published by:

Indian Institute of Education, Pune

Distributed by:

Voluntary Health Association of India
C-14 Community Centre, SDA,
New Delhi 110016.

Production supervised by:

Padam Khanna

Printed at :- J. K. Offset Printers, 315, Jama Masjid, DELHI-110006

12 Research	PAGES 187—192
V Implementation	
13 Administration, Finance and Implementation	195—209
14 Issues and Conclusions	211—224
VI Appendices	
Appendix 1: Abbreviations Used	227
Appendix 2: Statistical Tables	228—239
Appendix 3: Background Papers Prepared for the Committee	240—244
Appendix 4: Names and Addresses of Mem- bers of the Committee	245—246

Foreword

I have great pleasure in presenting this Report on "HEALTH FOR ALL: AN ALTERNATIVE STRATEGY", to the people of India.

Our group was constituted by the Indian Council of Social Science Research (ICSSR) under the programme of Studies on Alternatives in Health and jointly sponsored with the Indian Council of Medical Research (ICMR). The underlying idea of these studies is to bring health practitioners and social scientists together to study the social aspects of medicine with a view to suggesting reforms which would lead to the improvement in the health status of the people. Two publications in this series have already appeared. The first is a set of four papers dealing with alternative approaches to the development of health care and has been published by the ICSSR. The second, which is a study of ongoing experiments to provide an alternative strategy for health care has been published by the ICMR. This will be the third publication in the series and will be the culmination of an endeavour which began about five years ago with the report of the Srivastava Committee. We hope that this extremely valuable and fruitful joint venture of the ICSSR and ICMR will continue and that several other publications in the series will follow.

A word about the approach adopted in this Report. It is intended to be a basic document to initiate a nationwide debate on the subject, and it is addressed to all policy makers (legislators and senior civil servants), the health professionals, the educators, leaders of public opinion in all walk of life, and interested public. The size of the Report has, therefore, been deliberately kept

within limits; technical jargon and details are avoided; and all attention is focused on putting across the need for an alternative strategy and its prominent features. Our presentation should be judged against this background.

We cannot thank Prof. J.P. Naik adequately enough; he was the moving spirit behind the entire work of the Committee; he conceived the idea and carried it through, culminating in his drafting the Report.

We are grateful to all colleagues who prepared special papers for us and joined us in the discussion of major problems in health care; and especially to Prof. Carl E. Taylor who gave us immense help in our deliberations and in the finalisation of the Report. We are particularly grateful to the Indian Council of Social Science Research, the Indian Council of Medical Research, UNICEF and the Family Planning Foundation for their financial support. We are grateful to the Foundation for Research in Community Health for its valuable assistance in housing the Secretariat, library facilities and research assistance. We are grateful to Dr. Narottam Shah and the Centre for Monitoring Indian Economy, Bombay, for invaluable help in preparing the copies of the draft and final Reports and to Dr. A.D. Taskar, Institute for Research in Medical Statistics, New Delhi, for supplying the statistical tables. We place on record our appreciation of the help rendered by the Secretariat of the Committee and by the staff of the AIIMS, ICMR and ICSSR.

If this exercise succeeds in evoking a national debate on the radical changes needed in our health care system and if, hopefully, it leads to positive action, our labours would have been more than compensated.

New Delhi
30 August 1980

V. Ramalingaswami
Chairman

Members of the Committee

Chairman

Ramalingaswami, V.

Members

Arole, R.S.

Coyaji, B.J.

Deodhar, N.S.

Jungalwalla, N.

Krishnamurthi, C.R.

Naik, J.P.

Rao, V.N.

Sankaran, S.

Shah, Narottam

Sinha, B.N.

Subhadra, V.

Udapa, K.N.

Member-Secretary

Antia, N.H.

Secretariat of the Committee

Research

Amar Jessani

Padma Prakash

Srilatha Batliwala

Clerical

Jairam Shetty

Major Recommendations

Objectives

1. The objective of the national health policy should be to provide health for all by 2000 A.D. This implies the provision of a good and adequate health care system for all citizens, and especially for women and children and poor and underprivileged groups. It also implies a drastic reduction in the total morbidity and mortality. In particular, it will mean a fall in infant mortality from 120 to 60 or less, and in the overall death rate from 15 to 9 (Para 2.18). These objectives and targets are realistic and feasible. But they cannot be achieved by a linear expansion of the existing system and even by tinkering with it through minor reforms. Nothing short of a radical change is called for; and for this it is necessary to develop a comprehensive national policy on health (Para 1.20).

Approach

2. If this goal is to be realised, a major programme for the development of health care services is *necessary* but not *sufficient*. Health is a function, not only of medical care, but of the overall integrated development of society — cultural, economic, educational, social and political. Health also depends on a number of supportive services — nutrition, improvement in environment and health education. During the next two decades, therefore, the three programmes of (1) integrated overall development including family planning, (2) improvement in nutrition, environment and health education, and (3) the provision of adequate

health care services for all and especially for the poor and underprivileged (through the creation of an alternative model proposed here) will have to be pursued side by side (Para 14.04).

Integrated Development

3. The objectives of integrated development are to eliminate poverty and inequality, to spread education, and to enable the poor and underprivileged groups to assert themselves. This will include the following programmes:

- (1) Rapid economic growth with the object of doubling the national income per capita (at constant prices) by 2000 A.D. (Para 2.14);
- (2) Full-scale employment, including a guarantee of work on reasonable wages to every adult who offers to work for eight hours a day; creation of adequate opportunities of gainful employment for women, with an emphasis on equity of remuneration and reservations to make up for past neglect, so that women become 'visible' assets to their families (Para 14.05);
- (3) Improvement in the status of women with a determination to check the adverse sex-ratio and to make it rise substantially upwards, say to 927, the level it was in 1901 (Para 14.05);
- (4) Adult education with emphasis on health education and vocational skills, the targets being to cover the entire illiterate population in the age-group 15-35 by 1991 and liquidation of illiteracy by 2000 A.D. (Para 2.14);
- (5) Universal elementary education for all children (age-group 6-14) to be provided by 1991 (Para 2.14);
- (6) Welfare of Scheduled Castes and Scheduled Tribes (Para 2.14);

(7) Creation of a democratic, decentralised and participatory form of Government (Para 2.16);

(8) Rural electrification (Para 2.14);

(9) Improvement in housing with emphasis on the provision of houses for the landless and slum clearance (Para 2.14);

(10) Organising the poor and underprivileged groups (Para 13.22).

Family Planning

4. There should be a National Population Commission set up by an Act of Parliament to formulate and implement an overall population policy. The objective should be to reduce the net reproduction rate from 1.67 to 1.00 and the birth rate from 33 to 21. This will imply effective protection of 60 per cent of eligible couples against 22 per cent at present. It will also imply a reduction in the average size of the family from 4.3 to 2.3 children, and the eventual stabilization of the total population at about 1200 million by 2050 A.D. The family planning programme must be fully rehabilitated at an early date and converted into a people's movement closely linked to development. The emphasis should be on education and motivation, especially through interpersonal communication and group action. Incentives, especially those of a compensatory character, should be widely used. While work with women will continue through MCH services, intensive efforts should be made to work with men also. While the health services have a role to play in motivation also, their main responsibility is to supply the needed services and follow-up care. The alternative model of health services has been designed to meet these challenges fully and squarely.

Nutrition

5. Nutrition will have to be improved through adequate

production of food, reduction in post-harvest losses, proper organisation of storage and distribution and increasing the purchasing power of the poor through generation of employment and organisation of food-for-work programmes (Para 3.10). Great emphasis should be placed on improving the status of women and children (Paras 3.11—3.19) and special programmes should be developed for specific nutritional disorders like iron-deficiency anemia, or Vitamin-A and iodine deficiencies (Para 3.20). In addition, supplementary feeding programmes should be organised for carefully identified target groups at risk (Para 3.21).

Improvement of the Environment

6. Improvement of the environment will reduce infection, make programmes of nutrition more effective, and help materially in reducing morbidity and mortality. Safe drinking water supply will have to be provided to all urban and rural areas (Paras 4.02—4.04). Good sewage dispersal system should be established in all urban areas where simultaneously, a massive programme of proper collection and disposal of solid wastes and their conversion into compost will have to be developed (Paras 4.05—4.11). Similarly, an intensive programme of improving sanitation, with special emphasis on proper disposal of night soil, should be developed in rural areas (Paras 4.12—4.13). Greater attention will have to be paid to town and village planning (with special emphasis on removing the segregation of the Scheduled Castes), and large-scale programmes of housing for the rural poor and clearance of urban slums will have to be undertaken (Paras 4.14—4.16). Urgent steps have to be taken to prevent water and air pollution, to control the ill-effects of industrialisation and to provide better work-place environment (Paras 4.17—4.22).

Health Education

7. Health education should become an integral part of all general education and should receive adequate emphasis (Paras 5.03—5.09). Health education should also be an essential component of all health care; and the health care services should assume

special responsibility for the health education of the poor and underprivileged groups who need it most (Paras 5.11-5.16).

Alternative Model of Health Care Services

8. Within the health sector, our most important recommendation is that the existing exotic, top-down, elite-oriented, urban-biased, centralized and bureaucratic system which over-emphasizes the curative aspects, large urban hospitals, doctors and drugs should be replaced by the alternative model of health care services described in detail in Chapter VII in a planned and phased manner by 2000 A.D. This alternative model is strongly rooted in the community, provides adequate, efficient and equitable referral services, integrates promotive, preventive and curative aspects, and combines the valuable elements in our culture and tradition with the best elements of the Western system. It is also more economic and cost-effective (Chapter 6).

Maternal and Child Health (MCH)

9. MCH services should be expanded and improved. There should be attempt to cover all women and children with basic services with special attention to those 'at risk' through an essentially domiciliary programme (Para 8.09 and 8.11). The *dais* should be trained and fully utilised (Para 8.10). The MCH staff at each level should be adequate, have specific responsibilities (with an indication of priorities) and should receive job-specific training (Para 8.15). Health education of the mothers should be an important component of MCH services (Para 8.16).

Communicable Diseases

10. Communicable diseases still form the largest cause of morbidity and mortality and the fight against them should be continued with still greater vigour in the years ahead (Para 9.25). A good surveillance system has to be set up and better coordinated efforts are needed (Para 9.26—9.27). By 2000 A.D., our object

should be to eradicate or at last effectively control diarrhoeal diseases, tetanus, diphtheria, hydrophobia, poliomyelitis, tuberculosis, guinea-worm, malaria, filariasis and leprosy (Para 9.28).

Training and Manpower

11. Under the new alternative model, the organisation of the health services will be radically different from that in the existing system. A new category of personnel, the Community Health Volunteers will be introduced and it will be the main bridge between the community and the services (Para 10.06). The middle level personnel will increase very substantially (Para 10.08). Very important decisions will have to be taken about nurses, paramedicals, doctors, specialists and super specialists and these relate to their numbers, quality and duration of training, and value system (Para 10.08—10.14). There should be adequate arrangements for the continuous in-services education of all categories of health personnel (Para 10.15).

The Government of India should establish, under an Act of Parliament, a Medical and Health Education Commission, with comprehensive terms of reference. A continuing study of manpower and training and taking effective action thereon should be a major responsibility of this Commission (Para 10.16).

Drugs and Pharmaceuticals

12. There is need for a clear-cut drug policy and a National Drug Agency to implement it (Para 11.23). The pattern of drug production should be oriented to the disease pattern, with an emphasis on the production of basic and essential drugs (especially those needed by the poor and underprivileged groups) which should be produced in adequate quantities and sold at cheapest possible prices (Paras 11.05—11.13). The domination of the foreign section in drug production should be reduced further and price control made more effective by reducing overheads and packaging costs and adoption of generic names (Paras 11.14—

11.19). There should be strict quality control, supply of adequate drugs to the rural sector, and a move in the direction to make the clients pay for the cost of drugs (Paras 11.20—11.22).

Research

13. The priority areas obviously are primary health care, epidemiology, communicable diseases with a special emphasis on diarrhoea, environmental research, and research on drugs, problems of rural water supply and sanitation, indigenous medicine, health implications of industrial development, and family planning. It is also necessary to promote research on social aspects of medicine and especially on economics of health, jointly under the ICMR and ICSSR (Para 12.09). Considerable attention has to be given to the development of appropriate technology (Para 12.10). Side by side, there should be an emphasis on the development of clinical and basic research, particularly in the field of biology, and a determined bid to build up high-level indigenous research capability with a view to attaining self-reliance (Paras 12.11—12.12).

Administration

14. It is necessary to redefine the roles of the Central and State Governments in view of the large powers delegated to the local bodies at the district level and below (Paras 13.02—13.05). Voluntary agencies will have to function within the overall policy laid down by the State. But they should receive encouragement and aid, especially when fighting at the frontiers and doing pioneer work (Para 13.6). There will be considerable tensions within the new health care services and need for redefinition of roles and mutual adjustment. This is the responsibility of the administration to secure through good leadership and proper training (Paras 13.07—13.08). A new and efficient national information system should be created and adequate arrangements made for more effective coordination at all levels (Paras 13.10—13.11).

Financial

15. The total investment in health services should be substantially raised and health expenditure should rise by 8 to 9 per cent per year at constant prices and reach about 6 per cent of GNP by 2000 A.D. The existing priorities should be radically altered and the bulk of the additional resources will have to go into promotive and preventive activities, in rural areas, in the development of supportive services like nutrition, sanitation, water supply and education, and for providing health care services to women and children and the poor and underprivileged groups. This will need taking of both positive and negative decisions. While the majority of expenditure on health in the proposed organisation will be the responsibility of local bodies who will exercise financial control, basic responsibility of financing health will continue to rest with the Centre and States. An effort should also be made to tap local taxes and individual payments to cover drug costs (Paras 13.12—13.17).

National Health Service

16. The alternative model proposed here is a large step in the creation of a national health service, but it does not create it. In our opinion, the time is not ripe for the purpose and the issue may be examined in due course, say, ten years from now. There is, however, need to control private practice and it should not be allowed to employees in the public health care system. (Paras 13.18—13.19).

Conditions Essential for Success

17. The programme suggested here to realise the objective of health for all is as exciting and worthwhile as it is realistic and feasible (Paras 14.01—14.03). Its success will depend upon our capacity to create a mass movement and the ranks of millions of young men and women to work for it. It will be proportional to the extent to which it is possible (i) to reduce poverty and

inequality and to spread education; (ii) to organise the poor and underprivileged groups so that they are able to assert themselves; and (iii) to move away from the counter-productive, consumerist Western model of health care and to replace it by the alternative model based in the community as is proposed in this Report (Para 14.22).

I

The Approach

1

Wanted: An Alternative National Health Policy

1.01 While adopting the Constitution on January 26, 1950, we, the people of India, dedicated ourselves to the creation of a new social order based on equality, freedom, justice and the dignity of the individual and, to that end, decided to eliminate poverty, ignorance and ill-health. It is an integral part of this pledge that we review our achievement and failures periodically in this regard and rededicate ourselves to the pursuit of these long-term goals with better plans and renewed vigour. The object of this Report is to carry out this exercise in regard to health which, while being an end in itself, is also a major instrument of overall socio-economic development and the creation of the new social order the Constitution visualizes.

The Current Health Situation

1.02 We may begin this discussion with a survey of the current health situation in the country which will show what we have achieved or failed to achieve during the last 30 years and throw light on the causes of our successes and failures. As may be easily anticipated, the overall picture is a mixture of light and shade, of some outstanding achievements whose effect is unfortunately more than offset by grave failures.

Mortality and Morbidity

1.03 There has been a steady decline in death rate (the trend had begun even earlier in the decade 1921-31) from 27.4 in 1941-51 to an estimated 15.2 in 1971-81 (Please see Statistical Table No. I). This has naturally resulted in a corresponding increase in the expectation of life at birth. Half a century ago, an average Indian could, at birth, expect to live only 26 years. Today, he can look forward to a life-span of 50 years (Please see Statistical Table No. II). This is an achievement indeed. But let us remind ourselves that even this lengthened life-span is still short by two decades as compared to that in developed countries. It is also less than that achieved in Sri Lanka, China or Cuba.

1.04 There are some negative aspects of the picture. Mortality rates among women and children are still distressingly high. Almost one-third of the total deaths occur among children under five. Infant mortality rate is still about 120 per thousand live births (about half of these deaths occur in the first month of life (Please see Statistical Table Nos. III A and III B). This is far higher than in Sweden (9), USA (16), UK (17), Thailand (27) and Sri Lanka (45). This is an indictment of society's failure to provide not only medical care, but food, shelter, clean water and sanitation for its mothers and children. Similarly, the mortality rates among female children and among women of the child-bearing age are very high, the maternal mortality rate being as high as 418 per 100,000 live births (Please see Statistical Table No. IV). Consequently, we have an adverse sex-ratio and it has become even more unfavourable to women over the last 30 years (Please see Statistical Table No. V).

1.05 The current morbidity and mortality picture shows one major variation from the past. Famines no longer take the toll they used to; smallpox has been eradicated; cholera and malaria have been curbed; and immunization has protected children from dangerous childhood diseases like smallpox, whooping cough, diphtheria, tetanus and polio. But, in other respects, the overall character of morbidity has not changed much. Diseases arising from poverty, ignorance, malnutrition,

bad, sanitation, lack of safe water supply, drainage or adequate housing, and low levels of immunity are still the most common. These include tuberculosis, gastroenteritis, malaria, leprosy, filariasis, etc. (which rarely occur in the developed nations) and measles, tatanus, whooping cough, bronchitis and pneumonia, scabies, worms and fevers (especially among children). It appears that although the average Indian may now live longer, his morbidity is only marginally less than that of his forefathers and he continues to be largely prone to the same diseases as they were. While children are being saved from death, the problem of the surviving children with severe physical and mental retardation is one of considerable magnitude.

1.06 In both morbidity and mortality, there are large variations from State to State (e.g. between a death rate of 7.2 per 1,000 population in Kerala and a death rate of 19.2 in U.P.) and even within a State, there may be variations. The differences between urban and rural areas are also very large, and on the whole, the health situation in rural areas is more dismal. What is even more important, there is a marked difference in health status (which is found to be closely correlated with class, caste and income) between the upper and the middle classes on the one hand and the vast bulk of poor people on the other. Among the latter, frequent illness and untimely death is still the lot of the average individual; and among at least some sections of the poor, there is reason to believe that morbidity has increased rather than decreased.

Nutrition, Sanitation and Immunization

1.07 Nutritional deficiency, poor personal and food hygiene and bad environmental sanitation, both of which increase the risk of infection and inadequate measures to immunize people, are still the most frequent causes of morbidity and mortality, especially among the poor and vulnerable groups like women and children.

1.08 During the last 30 years, production of food grains has increased and we have also been able to build up fairly large

buffer-stocks. But due to several weaknesses in the situation, the overall nutritional picture has not improved. Large stocks of food continue to be wasted annually due to bad storage. There is little organised effort to improve cooking practices and dietary habits to make the available food go the longest way. What is worse, the purchasing power of many poor families seems to be declining so that they are not able to buy the available food. Alcoholic drinks and even wasteful expenditure on medical care often reduce the money available for the purchase of food even further; and the women and children do not get their due share in whatever little food ultimately reaches a poor family. Consequently, there are millions of individuals whose illness arises basically from malnutrition. No 'pills' can help them; and the only way to prevent their morbidity and mortality is to make a direct attack on poverty itself through such programmes as guaranteed employment at reasonable wages. Results achieved on this front in the last 30 years are, at best, marginal; and although there is some evidence to show that the percentage of people below the poverty line may have declined, there is no doubt that their absolute numbers have increased substantially.

1.09 From the nutritional point of view, ours is a dual society, consisting of a small group of the well-fed and a very large group of the undernourished. The top classes and income groups have no shortage of food and are even becoming prone to diseases of affluence and over-eating which one finds in developed countries. On the other hand, malnutrition is general among the poor and is often found, in severe forms, among vulnerable groups like agricultural labourers, Scheduled Castes and Scheduled Tribes, urban slum dwellers, etc. Malnutrition is particularly severe among women and children from these social groups. Very little has been achieved in remedying this basic evil and in creating a more egalitarian economic and social structure.

1.10 A good deal has been done for the control of communicable diseases. But the main battles still seem to lie in the future. Malaria, which was almost eradicated has staged a comeback. Tuberculosis, essentially a disease of poverty, still takes a toll of

about 500,000 lives a year; it is estimated that there are 8 million active cases of tuberculosis in the country, out of which approximately 2 million are believed to be infective sputum-positive cases. The population at risk of filariasis has increased from 25 million in 1953 to 136 million in 1975. Leprosy still continues to rage. India has one-third of the leprosy-affected persons in the world and about half of its population is at risk of the disease. Cholera, as stated earlier, has been significantly reduced; but other water-borne diseases still account for a large proportion of morbidity and mortality, especially amongst children. Acute diarrhoeal diseases alone are believed to take away 1.5 million lives each year. Sexually transmitted diseases are also on the increase. Tetanus, diphtheria and rabies are not yet under control.

1.11 In so far as improvement of the environment is concerned, the record of our performance is even more dismal and the little that has been achieved seems almost microscopic against the gigantic tasks before the country. About 80 per cent of the urban population has been provided with protected water supply. But as of today, only one village out of ten has safe drinking water and one village out of five does not even have the most elementary water supply facilities. Conditions regarding drainage and sewerage treatment are worse. Out of a total of 3,119 cities and towns, only 217 places with 34 per cent of the urban population are partially sewered; and it is estimated that 7 out of the 40 million urban households still use the open ground for defecation. In the rural areas, the problem is almost untouched and only a negligible 2 per cent of the population has been provided with sanitary latrines. The large expansion of modern industry in the post-independence period has created a new source of pollution — industrial wastes — and no adequate steps have yet been taken to control it. The country thus carries the double burden of the microbial pollution of the environment due to under-development and of chemical pollution due to industrial activity.

Education

1.12 Education is one of the important tools of health care.

If individuals can be educated to have the essential information, skills and values to take good care of their own health, the incidence of illness is considerably reduced and the management of illness, when it does occur, is made simpler and more economic. Very little has been done in this regard in the last 30 years. One important tool would have been the provision of universal primary education in which adequate health education is an integral part. The component of health education in primary education is meagre and at present only 25 per cent of the children complete primary school. Health education therefore never reaches the masses of the people and especially the poor. If programmes of non-formal and adult education had been developed in a big way, it would have been possible to convey health education to the illiterate young women, men and adults who did not or could not go to school when they were young. But these have never been developed. Health education is also a responsibility of the health care personnel. But very little is done in actual practice because they often do not have the aptitude and training and their crowded schedules leave little time for the purpose. In fact, health education of the people may be described as one of the most neglected areas in the health field.

Health Care Services

1.13 During the last 30 years, a vast network of health care services has been built up; and it now consumes about 60 per cent of the total investment in health. It has many good features and among them, special mention needs to be made of the excellence of its top institutions of research and training and highly specialized services. But it also has several weaknesses. It has no roots in the culture and traditions of the people and relies almost exclusively on imported Western models. The recent effort to assist the indigenous systems of medicine has only had marginal effect on this situation. It is largely a service based on

urban hospitals, with a curative approach. It was almost exclusively urban in the pre-independence period; and in spite of the establishment of a large number of Primary Health Centres (PHCs) and rural hospitals, its urban bias is still pronounced and a disproportionately large expenditure is still incurred in urban areas. Prior to 1947, it was almost exclusively oriented to the colonials and the elite. In spite of all the expansion of the last 30 years, the upper and middle classes are still its principal beneficiaries and it is said to 'fail at the periphery' which is only another way of stating that its benefits do not reach the poor or the bulk of the rural people. As it is devoid of any participatory element, it has actually increased the dependency of the people. Its costs are exorbitant; and on this basis, the country will not be able to provide good health care to all its citizens. (These issues have been examined in greater detail in Para 6.02 *Supra*).

An Overview

1.14 How then does one sum up the overall situation in health? It is obvious that there are several achievements to our credit such as reduction in mortality rates or increase in expectancy of life at birth; the expansion of medical research and education; the expansion of the health care services including especially the establishment of the Primary Health Centres; the excellence of our specialized institutions; the control of communicable diseases like smallpox, cholera, plague and malaria; the provision of MCH services on a larger scale; the initiation of a family planning programme; and the investment of far larger funds than at any time in the past. One has every right to feel proud of these achievements and they, in a way, give one a confidence in the future. But our failures are greater still. It has not been possible to integrate health with overall development. The family planning programme is far from being a success. Little dent has been made on the massive problems of malnutrition and environmental insanitation. The country has still a

very long way to go in the control of several communicable diseases that have almost disappeared from the developed world. The morbidity pattern has not materially changed and the rates of mortality among women and children are still woefully high. There is no programme of health education worth the name. The outdated and counter-productive model of health services which mostly benefits the rich and well-to-do upper and middle classes still continues to dominate the scene. In spite of all the additional funds provided, health is still a low priority and gets only about half the investment in education which itself is given a step-motherly treatment.

Wanted: An Alternative National Health Policy

1.15 Where do we go from here? That the situation is serious enough is agreed on all hands. But the proposals for reform fall into two broad categories. One approach assumes that the existing programmes are, on the whole, moving in the right direction and that what we need is marginal adjustments and changes such as more research, more hospitals and dispensaries, more and better trained personnel, more drugs and, above all, more funds. We do not share this view. We do believe that several of the assumptions on which the present system is based are wrong. For instance, there is no distinction between planning for 'health' and that for 'health services' so that little or no attention has been paid to the social, economic, political and cultural dimensions of health. Health is regarded as a responsibility of the Ministry and Departments of Health whereas it ought to be a national responsibility of all concerned — the people and the State. The imported and inappropriate model of health services is top-heavy, over-centralized, heavily curative in its approach, urban and elite oriented, costly and dependency-creating. The serious shortcomings of the model cannot be cured by small tinkering or well-meant reforms. We also believe that any attempt to pump more funds into a costly and wasteful system of this type will, instead of solving, complicate our major health

problems. We, therefore, are of the view that what we need without any further delay is

- integrated plans of health and development including family planning;
- total reorientation of the existing priorities so that the bulk of the available funds can be spent (i) on programmes of nutrition, improvement of environment, immunization and education rather than on curative services, and (ii) on basic community services at the bottom than on the superspecialities at the top. (Some available data on health expenditure during the last 30 years has been given in Statistical Table Nos. VI, VII and VIII);
- replacement of the existing model of health care by an alternative model which integrates promotive, preventive and curative aspects and is community-based, people-oriented, economic, decentralized, democratic and participatory;
- provision of all the resources needed to achieve these objectives in terms of personnel, materials and funds on a priority basis; and
- formulation and implementation of detailed plans, spread over the next two decades, for enabling every citizen to have effective health and for creating a healthy society.

Nothing short of these radical changes will meet the immense challenges before the country and raise the health status of the people to adequate levels by the turn of the century.

1.16 A significant first step in this direction would be for the Government of India to enunciate, in consultation with all concerned, a *comprehensive national policy on health*. It is sad to realise that such a statement does not yet exist, even after 33 years of independence. It is true that the Ministry of Health, Government of India, has recently put forward drafts of health and medical education policies for general consideration. But they are, at best, attempts to deal compartmentally with a problem which should only be dealt with comprehensively. Nor

has the problem been fully treated by any of the numerous committees on health, every one of which dealt only with some aspect or aspects of the problem. On some significant dimensions of the health policy, there is no formal statement at all and one has to infer them indirectly through other evidence. The matter is, therefore, extremely urgent. We welcome in this connection the formal adherence declared by the Government of India to the Alma Ata Declaration and the Asian Health Charter.

1.17 The aspects of this policy need special emphasis. The first is its *comprehensiveness*. It needs to be remembered that the health policy of a country cannot be equated with the objectives and programmes which the State pursues to enable its citizens to lead a healthier life. These are very important aspects of the health policy no doubt, but they do not constitute its totality. A comprehensive statement on the health policy of a society should cover

- (1) a *philosophical* dimension which deals with issues like the concept of health, value systems affecting health, and attitudes towards illness, pain, ageing or death which, in the final analysis, determine the nature and quality of the health services;
- (2) a *cultural* dimension which deals with life-styles of people which have far-reaching consequences on the practice of health;
- (3) a *social* dimension which deals with the social, economic and political organisation of the society as a whole because this totality has a tremendous impact on the health of the people which, after all, is a sub-system of the society;
- (4) an *environmental* dimension which deals with problems like public sanitation, pollution, water supply, housing, or settlement patterns, with a view to creating a physical environment that is promotive of health;
- (5) a *nutritional* dimension which deals with the fundamental issue of making adequate quantities of food of the appropriate quality available to all;

- (6) an *educational* or promotive dimension which defines the roles and responsibilities of individuals and families in maintaining a healthy society and the creation of adequate institutional structures to enable them to play these roles and to discharge these responsibilities;
- (7) a *preventive* dimension which deals with problems relating to the prevention of avoidable suffering, disease, or untimely death; and
- (8) a *curative* dimension which deals with measures for the provision of adequate and appropriate treatment when, despite all efforts, disease or ill-health does manifest itself.

To assure effective health to every individual and to create a healthy society, it is essential to give adequate attention to all these eight dimensions of the problem. A common error is to disturb the delicate balance that must be maintained among all these eight dimensions, to over-emphasize the curative dimension, to pay only a limited attention to the environmental, preventive and educational dimensions and to ignore all the other dimensions almost totally. This should be avoided.

1.18 The other important aspect of this policy is its *national* character. Health must become a national concern in the sense that the formulation and implementation of a health policy should be the collaborative and cooperative responsibility of individuals, families, local communities, and local, State and Central Governments. Unfortunately, this is not always done and, as we pointed out earlier, health policy is narrowly interpreted to mean action by the State alone or what is worse, by the unaided efforts of the health departments in the States and the Ministry of Health at the Centre.

1.19 The objectives of such a comprehensive health policy have already been clarified in the preceding discussion. For convenience, they may be recapitulated: (1) to integrate health with development and family planning; (2) to emphasize nutritional, environmental and educational dimensions; (3) to create a new system of health care; (4) to organise research and training of personnel; and (5) to provide all the drugs and materials needed. As mere enunciation of policy is not enough, steps will also

have to be taken to prepare a time-bound programme, preferably spread over the next two decades (1980-2000) and to implement it with sustained vigour by creating an adequate administrative machinery and providing the needed finance.

Recommendations

1.20 We therefore make the following recommendations:

(1) The Government of India should, in consultation with all concerned, formulate a comprehensive national policy on health dealing with all its dimensions, viz. philosophical and cultural, socio-economic, nutritional, environmental, educational, preventive and curative. The coordinated and planned implementation of this policy should be the collaborative and cooperative responsibility of individuals, families, local communities, health personnel and State and Central Governments.

(2) The basic objectives of this policy should be

- (a) to integrate the development of the health system with the overall plans of socio-economic-political transformation;
- (b) to ensure that each individual has access to adequate food and is provided with an environment which is conducive to health and adequate immunization, where necessary;
- (c) to devise an educational programme which will ensure that every individual has the essential knowledge, skills and values which would enable him to lead an effectively healthy life and to participate meaningfully in understanding and solving the health problems of the family and the community;
- (d) to replace the existing model of health care services by an alternative new model which will be
 - combining the best elements in the tradition and culture

of the people with modern science and technology,

- integrating promotive, preventive and curative functions,
- democratic, decentralised and participatory,
- oriented to the people, i.e. providing adequate health care to every individual and taking special care of the vulnerable groups,
- economical, and
- firmly rooted in the community and aiming at involving the people in the provision of the services they need and increasing their capacity to solve their own problems, and
- (e) to train the personnel, to produce drugs and materials and to organise research needed for this alternative health care system.

(3) A detailed time-bound programme should be prepared, the needed administrative machinery created and finance provided on a priority basis so that this new policy will be fully implemented and the goal of "Health for All" be reached by the end of the century.

2

Health, Development and Family Planning

2.01 The health of a society is intimately related to its value system, its philosophical and cultural traditions, and its social, economic and political organisation. Since each of these aspects has a deep influence on health and since health, in its turn, also influences all these aspects, it is not possible to raise the health status of a people unless such efforts are integrated with the wider effort to bring about the overall cultural, social, economic and political transformation of the society as a whole. Such coordinated and simultaneous efforts to improve health status and change the entire social order, generally yield better results because they are interdependent and mutually supportive. This is all the more so if one is planning for the 'health' of the people and not merely for 'health services'. In fact, good health and good societies go together.

Health and Economic Development

2.02 One of the best established epidemiological findings is that the prevalence and distribution of diseases is strongly influenced by economic factors. A cross-tabulation of prevalence or incidence of diseases by economic class in a population group shows that most infections and nutritional deficiency diseases common in developing countries can really be considered as 'diseases of

poverty'. As living conditions improve, they have tended to disappear spontaneously. This happens because, with improvement in economic conditions, people are better able to take care of their health problems. Their morbidity is reduced because they have better nutrition, greater resistance to infection, and even less infection because they improve their housing, sanitation and water supply as much for convenience and aesthetic reasons as on grounds of health. When ill, they are also in a better position to get medical care from public or private sources. This is of course true up to a point. When improvement in economic conditions leads to sheer consumerism or conspicuous expenditure, diseases of affluence related to over-indulgence and wasteful life-styles become major health hazards and often coexist with the 'diseases of poverty'. This is so in most developed countries today.

2.03 Some of the well-established findings of the relationship between health status and economic development have been summarized below.

(1) There is hardly any basis for the 'downward filtration' theory viz. that improvement in education and health will gradually but automatically trickle down from the upper and middle classes to the poor people. This process is not automatic, and the upper and middle classes often tend to prevent such filtration to maintain their position and to continue to exploit the poor.

(2) The synergism between poverty, malnutrition, infection and increased morbidity and mortality is now well-established. In other words, 'poverty' itself is an extremely tenacious disease. It must be directly attacked to improve the health status of the people.

(3) Given favourable social and political factors, even a comparatively limited economic growth can lead to an outstanding improvement in health status. This was clearly demonstrated in China and Cuba. It is also seen in Kerala where the improvement in health status is far better than that in the more affluent Rajasthan or Punjab because of a wider spread of education, greater social equality and deeper

political awakening. At any rate, it can be concluded from this example and some other (e.g. Sri Lanka) that integrated programmes of economic and social or political development make health services far more effective even at lower levels of economic growth.

(4) The converse is also true that an improvement in health status does lead to economic development. For instance, where a disease was endemic in a given area (e.g. malaria in the Terai region), its eradication led to a rapid development of the entire tract. Similarly, general health improvement has tended to increase worker productivity and thus contribute to economic growth.

Health and Social Development

2.04 As social and educational development takes place, there is a general trend for a simultaneous improvement in the health status as well. For instance, in Kerala, a better status for women, reduction in the rigour of untouchability, increased literacy and a wider spread of elementary education (especially among women) have led to a considerable improvement in the health status of the people; and where the opposite conditions prevail, as in U.P. or Bihar, the health status of the people continues to be low. The reasons are not far to seek. Improvement in social and educational status is generally accompanied by a greater capacity to take care of one's health problems. It also raises the age of marriage. Finally, it increases an individual's capacity to take advantage of the health services which the Government has provided. The converse is true in this case also. An improvement in the health status of a child increases his attendance at school and improves his performance. Similarly, improved health status is also found to contribute to upward mobility and ultimately to reduction of social inequalities.

Health and Political Development

2.05 The intimate connection between political development

and health status is well-established. In most developing countries, oligarchies of the upper and middle classes are in power. Their health status is very good and they derive the largest benefit from the public health services. On the other hand, the poor in these countries who form the large majority and are deprived of effective political power, have a low health status and receive only marginal benefits from the public health services. The situation is very different in countries where the democratic process is taken to the community level and the common people are involved actively in planning and implementing programmes for their welfare. Here the health status of the people as a whole has improved and the inequalities in health status of different social groups tend to be reduced. It will thus be seen that the political system does exercise considerable influence over the health system.

2.06 It is also true that the health system can influence political development. For instance, primary health care can be organised on a community basis and the people can be actively involved in studying their problems, deciding upon feasible solutions and implementing them. This is an essentially political experience which enables them to organise themselves and fight their battles in other fields as well. A properly organised primary health care system can thus set in motion processes to strengthen a decentralised, democratic and participatory social order.

Health and Integrated Development

2.07 Since economic, social, educational and political developments are complementary, it follows that the best results can be obtained from integrated development which means that the contribution of all sectors to health has to be recognized and collaboration encouraged just as one recognizes the fact that health also contributes to overall development in several ways and especially by changing values. As people realize that they and their children will have a longer and more productive life, they become more aware that the future is worth planning for.

Health improvements can thus play a dramatic role in changing a fatalistic orientation and in giving the people confidence in themselves.

Health and Family Planning

2.08 The provision of modern health services reduces death rates very rapidly but the adoption of the small family norm as a way of life is a long drawn out process which societies are slow to internalize. For instance, over the last 60 years, the death rate in India has fallen from 47 to 15. The birth rate has declined only from 48 to 33. This implies a large increase of population of over 2 per cent per year and it does create several hurdles for overall development. This only highlights the common experience that the first steps in modernisation often make the situation worse and that one has to press courageously further to taste the sweet fruits of progress. There is, therefore, no escape except to submit to the inevitable and accept rapid population growth as an inescapable price one must pay in the first phase of development. The best way out is to push ahead, because it is only a programme of further improvement in social, economic and political fields combined with a still further improvement in health status (resulting in considerable reduction in infant mortality), that can help to reduce the birth rates substantially and on a permanent footing. All that one can do is to make this first stage as short as possible and to limit it, say, to the next two decades. Even in the transitory phase, it is possible to reduce population growth rates by the available technologies.

The Implications for National Policy

2.09 What are the implications of these findings for our national policy on health?

Poverty and Inequality

2.10 The greatest weakness of Indian society today is poverty

which compels the majority of its population to live sub-human lives and the great inequality between the small privileged classes at the top and the bulk of the underprivileged people at the bottom. This inequality existed even in the pre-modern period but it is now greater. Over the last 200 years, the privileged classes have modernized themselves. They control most of the political power which they inherited from the colonial rulers. They exercise economic power as well because the structure of assets and income is highly skewed in their favour. They are also the principal beneficiaries of modern educational services. On the other hand, the conditions of the underprivileged groups have changed only marginally. Poverty, even in its grossest forms, and exploitation still dominate the scene. The absolute numbers of the poor have increased. They have hardly any effective political power, in spite of adult franchise, because they are not organized. They have little access to education; and illiteracy is still as high as 60 per cent. The poor are also marginalized and have no say in decision-making and implementation of even those plans which are meant for their welfare.

2.11 Under these circumstances, it is hardly a matter of surprise if the utilization of the modern health services also becomes inequitable; the urban, rich and well-to-do people get a disproportionately large share of their benefits while they hardly reach the bulk of the poor people. In fact, contrary to popular belief, modernization has actually increased the distance between the elite and poor. For instance, 200 years ago, the level of medical knowledge and technology was far poorer in comparison with the present. But two points deserve notice: (1) The simple treatment of illnesses known at that time was available to the common man in all parts of the country because there was a widespread net-work of practitioners of indigenous medicine and local *dais*, a large-scale use of home care in which leadership was provided by elderly men and women, and an extensive utilization of simple local or home-made remedies in day-to-day illnesses; and (2) the qualitative difference between this and what even a rich man could get in a town or city was not large. Today, on the other hand, the situation is entirely different. A portion of the poor are almost totally out of reach of the modern

health care system and still live traditional lives. The medical care they actually get is not different from what they used to get 200 years ago, and the propitiation of gods to cure illness is still in vogue. It is true that a section of the poor is now being exposed to modern medicine. But one is not sure that this is entirely to their advantage. The expenditure on medical treatment is becoming a disproportionately increasing item in the family budgets of the poor, and is reducing the funds they have even for such essential items as food. On the other hand, the privileged groups get very good medical care, both from private and public sources, and some of it can be compared to the best available anywhere in the world. In other words, our five years plans seem to have been meant for increase of inequalities rather than for their reduction.

2.12 There are other types of inequalities also. For instance, the sex-ratio is adverse and becoming more so. The status of women which was already low, has been adversely affected by the very process of development. The Scheduled Castes and Scheduled Tribes still live on the social fringe. The caste system is becoming stronger through political involvement and entrenching inequalities. Unless all such social inequalities are reduced, equality in health care or any other important walk of life is out of question.

2.13 The ideal of health for all is an egalitarian goal which cannot be realized under such adverse socio-economic conditions. If one desires to work for it honestly, one must be prepared to look upon poverty and inequality as the worst diseases of the social order which, in their turn, are responsible for several illnesses of its individual citizens. The effort to make every citizen healthy must therefore be developed against the backdrop of our equally intensive effort to cure our society of these basic evils.

Integrated Development

2.14 The reduction of poverty and inequalities can be successfully attempted only through an integrated programme of overall

development which is focussed on meeting the minimum basic needs of the common man. Such a programme would have the following components in addition to the health care system:

- (1) Rapid economic growth with the objective of doubling the national income per capita (at constant prices by A.D. 2000);
- (2) An emphasis on the production of goods and services needed by the common people and especially on adequate production of food;
- (3) Full scale employment, and employment at reasonable wage being guaranteed to every adult who is willing to work for eight hours a day;
- (4) Rural electrification;
- (5) Adult education with emphasis on liquidation of illiteracy, health education and improvement of vocational skills (the target group in this programme should be those in the age group 15-35 who are in the most significant productive and reproductive part of their life);
- (6) Universal elementary education to all children in the age group 6-14 with an adequate component of health education and work experience;
- (7) Improvement in the status of women (including the raising of age of marriage);
- (8) Welfare of the Scheduled Castes and Scheduled Tribes;
- (9) Improvement of housing, with emphasis on the provision of houses for the landless; and
- (10) Protection and improvement of environment (which has become an urgent and long-term national goal) with special emphasis on water supply, drainage and disposal of night soil and wastes.

2.15 The health development programme can be integrated conveniently with this larger programme of overall development in such a way that the two become mutually self-supporting.

For instance, the nutritional component of the health programme will get good support in programmes of increased food production, guaranteed employment which will raise the purchasing power of the poor, education which will help in improving storage, cooking and dietary practices, and improvement in the status of women. Improvement of environmental sanitation can also be effectively linked with the urgent programmes of protecting the environment and preserving the ecological balance. Health education can be conveniently linked to programmes of adult and elementary education which will have large components of health education and work-experience/vocational education. It is also easy to see that the new health services, with their emphasis on an integration of the promotive, preventive and curative aspects of health will promote these programmes of overall development through increase of labour productivity and inculcation of essential values.

Democratic Decentralization

2.16 It is necessary to emphasize the need for democratic decentralization if a good alternative health care system is to be evolved. In the past, health was regarded as a commodity to be sold or distributed or as a service to be provided to passive recipients. The average citizen was therefore considered to be the 'object' of health care, the responsibility for defining his health needs and meeting them being placed on professionals and other authorities. The present approach is very different. The individual citizen is now looked upon as the 'subject' rather than as the 'object' of health. Health is now regarded, not as a commodity or service, but as a process of living and being, a close involvement which will make individuals and communities healthy. As the object of all developmental activities is to increase the capacity of the people to solve their own problems, the object of health care services also is to involve individuals and communities in understanding their health problems and striving systematically to solve them. In fact, the present view is that the goal of health for all can only be reached through a fully democratic process: it must be a programme of health for

the people, health of the people and health by the people. This new approach to health cannot be implemented in a centralized political system where experts take all the decisions for the people and the bureaucrats implement them, again for the people. It is therefore necessary to abandon the existing centralized and top-down approach to the organisation of health services and create a new system of building from below with community-based health services. This will be possible in a democratic, decentralized, and participatory system of government in which the people in a community have the authority, resources and expertise to prepare and implement all plans for their welfare, including health. It is this larger system that one should strive to create and there is no doubt that the development of the alternative system of health care we visualize in this Report will materially assist its creation.

Health and Family Planning

2.17 It has been estimated that, if the population were to continue to grow at the present rate, it would reach the level of about 1,270 million by 2015, i.e. about four times as much as it was in 1941, only 74 years ago. The implications of this population in terms of food, housing, employment and levels of living in general are so staggering that the urgency of mounting a massive programme of family planning is beyond dispute. The main question is to decide upon the best strategy to realize the objective.

Objectives

2.18 In this context, the first step is to set up a feasible long-term national goal. The *Working Group on Population Policy* set up by the Planning Commission (1980) has suggested that a difficult but still realistic and feasible target would be to reduce the Net Reproduction Rate (NRR) which is now 1.67 to 1.00 on an average for the country as a whole by 1996 and for every State by 2001. We share this view. For ready reference,

the full implications of this decision are stated below:

- the average size of the family would be reduced from 4.3 children to 2.3 children;
- the birth rate would be reduced from 33 in 1978 to 21 in 1996;
- the death rate would be reduced still further from 15 to 9, with a still steeper fall in infant mortality from 120 to 60 or less;
- the proportion of eligible couples protected by modern contraceptives would increase from 22 per cent to about 60 per cent; and
- the nation's population would eventually stabilize, with a small positive growth, round about 1,200 million by A.D. 2050.

It is obvious that the goal is worth working for in spite of all the difficulties involved. To realize it, detailed operational programmes will have to be worked out for each State as well as for the country as whole. While these programmes would naturally vary from State to State to suit local conditions, it is the responsibility of the Centre to ensure that each State falls in line with the national policy and programmes and that the objective set before the people are effectively realized.

2.19 Since a programme of population control can succeed only against a back-drop of (1) overall integrated development and (2) adequate provision of health care, the targets in family planning given above will have to be closely linked with corresponding targets and programmes in these two related fields as well. In respect of the integrated development programme stated above in Para 2.14, this exercise will have to be done by the appropriate authorities. For instance, the Ministry of Education has proposed that all those in the age group 15-35 should be covered by the national adult education programme by 1991, that universal elementary education for children in the age group 6-14 should be provided by 1991, and that illiteracy should be liquidated by the end of the century. The principal object of this Report is to suggest the appropriate programmes and targets for the development of the health care system. These

will be discussed in the appropriate context. It is also obvious that all these three programmes will have to be pursued simultaneously and in an integrated fashion.

The Role of the Health Care Services

2.20 If family planning thus is a comprehensive and integrated programme which, in the final analysis, is the responsibility of the nation as a whole, the people and the government, what is the precise role of the health care services? From the operational point of view, the family planning programme can be preferably divided into three phases: (1) motivation and decision-making; (2) provision of technical services; and (3) follow-up. All agencies, non-official and official, have to be involved in the first phase of motivation. This is what is implied in the statement that family planning must become a popular movement. In this phase also the health services have a significant role to play because they come very close to the people and are in a position to win their confidence better. But they cannot be burdened with almost the entire responsibility for the programme as is the case at present. The health services, however, have a greater responsibility in the second and third stages. Not only must they provide effective and safe technical services (including information and advice) for contraception, but an efficient follow-up system for continuing care. This is critical since the gains and losses in family planning result from word-of-mouth publicity more than from anything else. By transferring skills to village-level workers, they must make family planning services as accessible and widespread as possible.

Motivation

2.21 The entire family planning programme hinges on the acceptance of the small family norm by the people. The programme has suffered in the past because this acceptance has been slow in coming. There are important reasons for this:

- (1) Religious and traditional beliefs encouraging and sanctioning large families still exist and often get support from social and political conditions.

- (2) In poor families children are still an economic asset, while the cost of bringing them up is very small. There are thus positive built-in incentives for large families.

- (3) The existing high infant mortality rates impede the acceptance of the small family norm. It is only when people find that children generally survive that a small family norm may come to be accepted gradually. Besides, the general desire to have two sons or at least one can only result in large families for most parents.

- (4) Lack of education and modernization, especially among women, is another major obstacle to progress.

- (5) People are not involved in the programme and there is always the feeling that it is being developed at their cost for somebody else's benefit.

Development, reduction of poverty, improvement in health conditions (especially reduction of infant mortality), spread of education and modernization are thus crucial to progress, and the acceptance of the small family norm by the people in general will depend essentially on the extent to which the family planning programme is linked effectively to these developmental activities.

2.22 In the days ahead, motivating the people would be easier because the programme has been linked to overall development. While this will provide a more favourable back-drop than in the past, special and pointed efforts will still be needed to create demand on the large scale that we have visualized. Some of our major recommendations for this point of view are given below:

- (1) Family planning should become a national and people's movement, beyond party rivalry. For this, it may be desirable to set up a National Population Commission by an Act of Parliament. It should give representation to all the concerned interests, review the entire population policy and its implementation, and submit an annual report to Parliament. At the bottom, family planning, provision of health services and local development should be made the

responsibility of the local community. The alternative model of health care services we have proposed is especially suitable for this purpose. In between, there should be appropriate linkages at the State and district levels.

(2) Women have a significant stake in the programme; and even now, in spite of all the illiteracy, lack of status and other handicaps, they give it far greater support. The MCH services have thus a major role and a special responsibility. Tubectomy and spacing methods such as IUD and oral pills should be provided fully. Special steps should be taken to involve women in the programme at the local and community levels. Efforts should be made to raise the status of women and also the age of marriage to 18 years (21 years for men). In addition, it is of utmost importance to make an intensive effort to work with men and to motivate them adequately to play their proper role in the development of the programme. This will facilitate the task of working with women also.

(3) In the existing conditions, the most effective tool for motivation is inter-personal communication and group motivation. The existing health services are not organised from this point of view. The alternative model we have proposed overcomes this deficiency. In addition, we should also involve in this programme all local level agencies, official or non-official.

(4) Educational institutions have a major role to play in creating motivation. We will discuss this in detail in a later chapter.

(5) We support a discriminate use of incentives, because any over-emphasis on monetary incentives will be self-defeating and create additional problems like corruption. The 'incentive' of a cash award to a person who undergoes sterilisation, is really a compensation for loss of wages, etc. It should be liberalised and continued. It should be possible to introduce imaginative schemes of incentives based on social security concepts (e.g. grant of pension to a sterilised couple who lose their children) and incentives aimed at

providing community benefits (e.g. grant for a tank or a school building) to a village which shows good results.

Delivery of Services

2.23 Once the demand is created, it has to be met quickly, efficiently and as near the home as possible. This creates major problems for the delivery system, especially as the services have to be provided, not as one short affair, but on a continuing basis. We have not been able to organise the delivery of services on a satisfactory basis even when the total demand was so small. In the days ahead, this will increase several fold and the problem will become more complex. A careful planning of the delivery services is, therefore, a priority matter.

2.24 The alternative model of health services we have suggested is specially designed to overcome the difficulties we experience at present and to improve promptness, effectiveness and efficiency. In addition, we suggest the following:

(1) Terminal contraception has played an important role in the programme so far. While its use should continue and may cover an increasing number of individuals, intensive efforts have to be made to increase the proportional use of other methods of contraception as well.

(2) There should be full utilisation of the community health team, particularly *dais* and male and female community health workers, for promotion, motivation, communication, logistics, marketing and community mobilisation. These workers should further enlist the support of local organisations such as mahila mandals, youth clubs, etc. The community hospital and health centres should provide only technical back-up for sterilisations, high-risk cases, complications, and so forth.

(3) The private general practitioners of all categories should be fully involved.

(4) Family planning should be built into the common structure of society. For instance, conventional and oral

contraceptives at highly subsidised rates should be sold through ordinary shops, making them an every day consumer item.

(5) Follow-up activities aimed at continuity of care which are now largely neglected should receive greater emphasis.

Management and Research

The *Working Group on Population Policy* has made several valuable recommendations regarding the management of the programme and the research support to be provided for it. We agree with these recommendations.

Recommendations

2.26 What is the summing up of all the foregoing discussion? It means that the progress we have made in the last 30 years in the basic tasks of creating the new social order visualised in the Preamble to the Constitution and abolishing poverty, ignorance and ill-health, is good enough to inspire confidence in the future, but far too inadequate. We must, therefore, rededicate ourselves to these tasks and strive to complete them by A.D. 2000. From this point of view, we make the following recommendations:

(1) *Integrated Approach*: Programmes for improving the health of the people will have to be integrated with those for (a) economic development, (b) social development, (c) the creation of a democratic, decentralised and participatory form of government, and (d) family planning, because these are interdependent and mutually supportive.

(2) *Reduction of Poverty and Inequality*: Poverty and inequality are the main diseases of the existing social order in the country; and in their turn, they are responsible for the largest proportion of morbidity and mortality among the citizens. The egalitarian goal of health for all can be realised

only against the backdrop of an intensive effort to cure society of these basic evils.

(3) *Community Participation*: Individuals are subjects of health and not its objects. Health is neither a commodity nor a service, but a process of living, participating and being. Good programmes of health care have, therefore, to be based in the local communities which should have the necessary authority, resources and expertise to manage their health. This implies a democratic, decentralised and participatory system of government which we should strive to create.

(4) *Family Planning*: The objective of the family planning programme would be to reduce the existing Net Reproduction Rate (NRR) of 1.67 to 1.00 on an average for the country as a whole and in every State by A.D. 2001. The achievement of this goal requires that corresponding and similar targets should also be fixed for (a) programmes of socio-economic development and (2) provision of health care and that all the three programmes should be pursued simultaneously and in an integrated manner.

(5) The health care services will be concerned with all the three phases of the programme—motivation, delivery of services and follow-up or continuing care. But they will have significant responsibilities for the second and third phases.

(6) The integrated programme of development suggested above will provide a more favourable backdrop for motivation in the days ahead.

All the same, motivation will have to be specially promoted by making the programme a national people's movement, concentrating effort both on men and women, greater use of inter-personal communication and group motivation, more intensive educational effort and a discriminate use of incentives.

(7) While terminal contraception will continue to be an important task, intensive efforts should be made to increase

the proportional use of open methods as well. The community health team and private medical practitioners of all types should be fully utilised. Family planning should be built up into the every day activities of the society and follow-up activities should receive greater emphasis.

II**Supportive Services**

3

Nutrition

3.01 An effective health care system needs several supportive services which are largely outside the Department of Health in the States and the Ministry of Health at the Centre. They are also managed by personnel other than those in the normal health services. And yet they give crucial support to the health status of a people. These include:

- (1) Nutrition;**
- (2) Improvement of the Environment ; and**
- (3) Health Education**

We shall discuss these supportive services in this and the following two Chapters.

Nutrition and Health

3.02 Food is the most basic prerequisite of life: it builds the body, provides energy for living and working, and regulates the bodily mechanisms essential for health and survival. It is, therefore, the foundation of health. Its significance for a poor and hungry country like ours was highlighted by Mahatma Gandhi when he said that God will have to appear in India in the form of a loaf of bread.

3.03 Direct starvation deaths are few. But the morbidity and mortality which malnutrition leads to in our country are

fantastically large and their economic and human costs are even more grave.

(1) Inadequate food intake, due mainly to poverty, makes an individual more prone to infection and decreases his resistance to overcome it. Infection, in its turn, tends to increase the incidence of malnutrition. This vicious circle has already set in for a significant proportion of our population. A large proportion of cases of morbidity and mortality from infectious diseases should really be attributed to malnutrition.

Tuberculosis, diarrhoeal diseases and measles are good examples in this regard.

(2) Malnutrition is particularly severe among women and children. In a situation of scarcity of total available food which the average poor family has to face, the instinctive response is to feed the working adult men first to maintain work efficiency and to hold the family together as a biological unit. Young children and women, therefore, tend to be habitually undernourished and have been designated as 'vulnerable groups'. A major part of infant and child mortality, whatever the immediate causes assigned to it, is really due to malnutrition which reduces the body's defences. Similarly, women in general and pregnant and lactating mothers in particular, tend to be undernourished. This increases the mortality among them. It also has an adverse effect on the health and mortality of the babies to be born.

(3) Apart from general malnutrition, there are some special forms of undernourishment which are large enough to cause serious concern.

(a) *Vitamin-A Deficiency*: Vitamin-A deficiency is widespread, its incidence being particularly high in children of pre-school and school-going age. Its severe form often results in loss of vision and it has been estimated that around 25,000 children become blind every year. Milder clinical manifestations such as night blindness, xerosis of the conjunctiva and Bitot's spots are seen in 2 to 15 per cent of children depending on the region.

(b) *Anemia*: Iron deficiency anemia is seen in almost 50 per cent of children below the age of 5 years and in 30 to 43 per cent of women during their reproductive life. Anemia is one of the commonest complications of pregnancy. Almost half the number of pregnant women have low levels of haemoglobin during the third trimester of pregnancy. Weights of infants born to anemic mothers have been found to be lower than those of infants born to non-anemic mothers. This low birth weight affects neonatal morbidity and subsequent growth and development of survivors.

(c) *Goitre*: Goitre which arises from iodine deficiency is endemic in the sub-Himalayan region and also in certain other areas. Some other endemic diseases due to nutritional disorders (e.g. pellagra, which is due to imbalance of amino acids and lathyrism, which is due to a toxic element in Kesari dal) are also found.

(4) The long-term effects of malnutrition on health status are even more grave. Even if the undernourished child does not die, he or she may grow to adulthood stunted and physically weak. Often, his intellectual development may be adversely affected. Some of this damage is probably irremediable through treatment in later life. This only highlights the tremendous human costs of malnutrition, to say nothing of the staggering loss in worker efficiency.

(5) Nutritional disorders also arise from over-eating, from too much consumption of sugar and fats, and the growing tendency among the rich to sacrifice health for 'taste'. Even in a hungry country like ours, this phenomenon exists on a fair scale and is growing.

Character and Extent of Malnutrition

3.04 The most widespread form of malnutrition in India is protein-calorie malnutrition (PCM). There was at one time

considerable discussion of the so-called 'protein gap' in the country. But it is now recognized that while most diets as eaten by the Indian people do contain minimal requirements of protein, what many diets do lack are sufficient calories to permit the protein to be utilized for growth and maintenance of functions. Unfortunately, however, there is no unanimity on the extent of this malnutrition because scientists do not agree on the daily calorie needs of an average Indian and different standards are assumed for estimating malnutrition. The surveys conducted by the National Institute of Nutrition, Hyderabad, show that almost four out of ten rural households consume diets which do not meet their calorie needs; and the available data on urban slums show that the malnutrition there is in no way less than that in rural areas. Dr. P.V. Sukhatme, however, estimates malnutrition in urban and rural areas at 25 and 15 per cent respectively. In spite of these differences, three main conclusions emerge.

- (1) The extent of PCM is scandalously serious even if the lower estimates are accepted.
- (2) Overall estimates of PCM are misleading. In actual practice, such malnutrition is concentrated among specified social groups (the Scheduled Castes, Scheduled Tribes, agricultural labourers, etc.), the vulnerable sections of the population (children below five and pregnant and lactating mothers), and certain tracts of intensive endemic poverty. Among these populations, the extent of malnutrition is much larger.
- (3) The situation has also a time dimension. Malnutrition is greater in certain periods of the year when employment is low and food prices tend to be high, and in calamities like floods or famine.

The problem of malnutrition in the country is thus basically a problem of the poor and the socially disadvantaged.

Why Malnutrition?

3.05 It must be clearly realized that malnutrition in India is

not a problem of resources nor of technology. It is, instead, a human, social, political and moral problem.

3.06 India has adequate land and water resources and enough technical know-how to feed even the stabilized population of 1,200 million. Over the last 30 years, agricultural production has given a good account of itself, in spite of the vagaries of the monsoon; and given the right policies, its potential for further growth is still larger. If all cultivable land could be utilized and if the full irrigation potential is realized, even existing technology would double total agricultural production or even more over the next 20 years. There is also considerable increase in food-grains possible if the cultivation of cash crops like opium or tobacco could be restricted. It could, therefore, be confidently asserted that we have the resources and technology to produce all the food we need. If we do not actually produce it, the reasons are largely social (e.g. exploitative relations of agricultural production), or managerial and political (e.g. inability to make the best of available resources). We should also not forget that a large percentage of the food actually produced (estimated at about one-fifth of the total) is lost due to failure to organise post-harvest operations on a proper basis. This is a technological as well as a social and managerial failure. We do not need further research and better technologies. But the need to concentrate on the human and social factors in agricultural production and post-harvest operations is even greater.

3.07 When it comes to the distribution of available food (and our malnutrition arises, not so much from inadequate production and preservation, as from hopelessly unsatisfactory distribution), the failure is essentially economic, social and political. It is the poor who do not have the capacity to buy food. The causes of this poverty are economic (highly skewed structure of income and assets, large incidence of under-employment, unemployment and exploitation), social (tyranny of upper and middle classes over the lower ones, high rates of illiteracy and morbidity) and political (lack of organisation among the poor). In short, maldistribution of food is simply due to man-made poverty whose roots go deep into the social, economic and political structure of the society.

3.08 For two reasons, we consider the problem of maldistribution of food in the society to be a moral issue also. Poverty is not the poor man's fault. He is not responsible for his hunger and cannot alleviate it. To ignore his sufferings is therefore immoral. Secondly, no one in this country has a moral right to waste food, to over-eat, or to cultivate dietary habits of conspicuous consumption. But this is what our privileged classes are doing increasingly. What is even worse, adulteration and black-marketing in food is common and increasing and neither the law nor the enforcement machinery is adequate to control it effectively.

Programme of Action

3.09 What are the action programmes we should develop to reduce malnutrition and thereby make the most significant contribution to the health status of the people? These fall into three broad categories. The first includes general programmes which are aimed at the eradication of the major causes of malnutrition; the second includes programmes intended for vulnerable groups like women and children; and the third includes remedial programmes for specific nutritional disorders.

General Programmes

3.10 There are five general programmes which will bring about a total transformation in the existing nutritional situation.

(1) The first basic need is to increase the total available food supply. Over the next 20 years, production of food should increase at about three per cent per year; and our agricultural production policy should be oriented to the balanced production of nutritive foods for the common people.

(2) The second need is to build up adequate buffer stocks and to eliminate post-harvest losses and to provide for better storage. A nation-wide network for the distribution of food at controlled prices is needed. An appropriate pricing policy will also have to be adopted to reconcile equitably the conflicting demands of higher prices to make food production attractive and of lower ones to make food more readily available to the poor.

(3) Perhaps the most important measure would be to increase the purchasing power of the poor. This can be done only through increase in employment at reasonable wages. There must be an intensive effort to ensure that all under-employment and unemployment is eliminated as early as possible. There should also be a guarantee of employment to every adult who offers to work for eight hours a day. Food-for-work programmes should be organised in a big way. Special attention should be given to employment of women, Scheduled Castes, Scheduled Tribes, agricultural labourers and other weaker sections. Of all general programmes, this will be most effective to improve nutrition and yield immediate results.

(4) To break the vicious circle of malnutrition-infection-further malnutrition, a large programme of providing safe drinking water, improvement of environmental sanitation, control of communicable diseases and provision of primary health care should be developed.

(5) Nutrition education aimed at better utilization of available food through proper domestic storage and adoption of improved cooking practices and healthier dietary habits will make a major contribution to the solution of malnutrition. This will have to be promoted through the programmes of elementary education and adult education which should be developed to cover the entire population. In this context, reference may be made to the imaginative scheme of cheap canteens developed by Dr. Sukhatme where he provides nutritious food in simple menus at very low cost. This has a remarkable demonstration effect and, if developed on a

large scale, will have a dramatic influence on improving cooking practices and dietary habits among the people in general and the poor in particular. It is also desirable to promote the idea of community kitchens and to encourage use of low-cost, processed and ready-to-eat food. It has an immense potential for social change, for releasing women from a good deal of avoidable drudgery, and for energy-saving. Yet another useful idea is to encourage kitchen gardens from household waste water. They could provide a valuable supplement of greens and leafy vegetables to the poor man's diet.

It is unfortunate that these general programmes for the improvement of nutrition have received very inadequate attention in the past. They will have to be pursued as very high priorities in the years ahead.

Programmes for Women and Children

3.11 The general programmes of nutritional improvement listed above will also benefit women and children. But these vulnerable groups will need some special programmes in addition.

3.12 The most vulnerable period in the life of an Indian is early childhood (0-4 years). The available data shows that the diets ordinarily consumed by only 40 per cent of our children can be considered as adequate. Between 2 and 5 per cent of the rural children belonging to poor families suffer from clinically recognizable, severe nutritional diseases like Kwashiorkor and Marasmus. If growth retardation is regarded as an indicator of nutritional status, about 60-65 per cent of the children should be regarded as undernourished. It has been estimated that there are now about 45 million undernourished children in our country, that they need an extra 300 calories per day, that this supplement could be supplied at the cost of 40 paise per child per day, and that the foodgrains required for the purpose would be only about 1.5 million tonnes a year. The nutritional status of children of school-going age (6-14) is a little better but still sufficiently low to cause concern.

3.13 It is not possible to improve the nutritional status of a child without improving the nutritional status of the family as a whole. The best, and in fact, the only effective programme for the purpose is therefore to increase the family income through guaranteed employment at reasonable wages. The employment of women assumes great significance in this regard because experience has shown that children get a much larger share in the mother's income than in that of the father's.

3.14 It has also been recognized now that the nutritional status of children cannot be improved in isolation. To succeed, a nutritional programme for children must be an integral part of a package which includes immunization, provision of health care, and above all, the education of mothers on the proper care of children. Perhaps, a very crucial role in this is played by proper breast feeding, weaning at the right time, and providing the child with adequate and proper food in the post-weaning period.

3.15 Breast feeding has been our most valuable nutrition asset and the most invaluable protection for our infants. The vast majority of women do breast feed children for prolonged periods; the quality of milk is good, especially with regard to protein content, in spite of the poor diets of the mothers; and what is equally important, there is a decline in fertility during the period of lactation. If this were not done there will be no resources, not even the milk, to bottle-feed the children, apart from all the high risks of infection or increase in fertility involved. Experience has shown that bottle-feeding a child very often means giving him diluted contaminated foods containing minute doses of nutrients and massive doses of bacteria. In spite of all the biological evidence in favour of breast feeding, women from the well-to-do classes have started to imitate their Western sisters and to bottle-feed their young. The custom is also spreading, under compulsion, to poor urban women working in industries or occupations which do not allow for breast feeding. This is one of the many instances in which we are abandoning valuable elements in our tradition and aping harmful aspects of modernism. The sooner the process is reversed the better.

3.16 What is needed is education, especially of women, on the importance of breast feeding and effective steps to ensure that the lactating mother does get adequate nutrition. The mother should also be trained to know when to wean the child and how to give him adequate food in the transitional stage when he passes from a liquid diet of milk alone to a mixed adult diet and is deprived of the protection he earlier received from the supply of immunoglobins and other substances in his mother's breast milk. We would also like to emphasize that adequate diets for children in this transitional stage can be designed on the basis of cereals and legumes in accordance with local customs and habits and that neither milk nor animal foods are indispensable for the purpose, although they would be convenient. This highlights the huge waste of funds for hundreds of brands of baby foods which, like other imitations of the consumption-oriented civilization of the West, is not only wasteful but positively injurious. In fact, we would like to highlight the point that the greatest safeguard against malnutrition and illness in young children lies in the education of mothers and in giving them proper insights in effective child care through less costly, simple and locally available resources.

3.17 The nutritional status of our women, especially from the poorer sections, is far from satisfactory; and this becomes even more so at such critical periods of life as pregnancy and lactation. This is due to a variety of social and cultural factors and especially to the tradition that the most important persons in a family are adult males and that their health and survival is of far greater significance for the continued social and biological functioning of the family than the survival of a particular child, mother or wife. Women generally eat last, after the men and children are fed, and do not naturally get an adequate share of the total available food, especially in situations of scarcity. As a rule, they also voluntarily starve themselves to provide better food to the children and the men-folk. The special nutritional needs of pregnant women and lactating mothers are often ill-understood; and not infrequently, the traditional practices on this subject are injurious or wasteful. The basic issue, therefore, is one of cultural, social and economic change; how do we

make people accept the position that women are as important members of the family as men and that their responsibilities for motherhood entitle them to a special consideration, at least during pregnancy and lactation?

3.18 Perhaps the most significant step that can be taken in this direction is to give education to women, to improve their vocational efficiency and to give them employment on a far larger scale than at present. Today, the life of the average woman is held to be expendable; and it will not be possible to alter this situation unless women are gainfully employed and become 'visible' assets to the family. If generation of employment is the best remedy to improve the nutritional status of a man, the generation of employment for a woman is the best means to improve, not only her nutritional status, but the nutritional status of the children as well. The valuable work done by the National Committee on the Status of Women, and the Women's Programme of the Indian Council of Social Science Research, has shown that 'development' has adversely affected women, that their employment status has deteriorated rather than improved over the last 30 years, that this basic deterioration has also adversely affected their nutritional status and access to health care services, resulting in increased deaths and an adverse sex-ratio. What is needed is a reversal of this process; a determined effort to generate employment for women, with statutory reservations to make up for past neglect.

3.19 It is unfortunate that this much-needed programme to improve the nutritional status of women and children has received even less attention than the general programmes for the population as a whole. It will therefore have to be developed vigorously over the next 20 years.

Special Programmes

3.20 The last category of nutritional programmes include remedial measures directed at specific groups. This is the only

area in which we have been active during the last 30 years. The programmes actually developed fall into two categories. The first includes programmes whose objective is to remedy some nutritional deficiency observed on a large scale. These include the following:

(1) *Vitamin-A Prophylaxis Programme*: The massive dose Vitamin-A prophylaxis programme to prevent blindness in children arising from Vitamin-A deficiency was initiated in 1972 and is currently expected to cover over 20 million children in the age group 1-5 years. Envisaged as a short-term measure until such time when dietary intakes of Vitamin-A will improve, the programme has consisted of the administration of 200,000 I.U. of Vitamin-A once every six months to all children between one and five years of age. The evaluation of this programme has shown that some impact has been made in several States, and that a greater impact would be possible if the administration of the programme is improved. The frequency of some ocular signs of Vitamin-A deficiency has come down. But this is as yet no clear evidence that nutritional blindness has been prevented.

(2) *Goitre Control*: This programme consists of the distribution of salt fortified with iodine, a procedure which has been established beyond doubt to be capable of controlling goitre. Administrative failure, however, has made this programme ineffective and goitre continues to dominate the scene in the sub-Himalayan region and some other areas.

(3) *Iron Deficiency Anemia*: Iron deficiency anemia is widely prevalent in 50 per cent of the children below five and every alternate pregnant woman in the third trimester of pregnancy is anemic. In depth studies have shown that simple administration of iron and folic acid tablets to pregnant women during the last 100 days of pregnancy, prevents anemia and results in an increase of the birth weight of the newborn. Based on this finding, a national programme of distribution of iron and folic acid tablets has been in operation.

Monitoring of this programme has been rather poor and there is no evidence as yet that pregnant mothers have received significant benefits from this programme.

These are basically good programmes. We recommend that they be continued and made more effective through managerial improvements or better technology (e.g. fortified salt for anemia). It is necessary to emphasize that much better results would be obtained through improved diets consisting of green and leafy vegetables or fruits like papaya and mango.

3.21 The second category of these programmes are known as supplementary feeding programmes and their objective has been to supplement the daily intake of food of some specified categories of people who are known to be suffering from PCM. These include the following:

(1) *Applied Nutrition Programme*: This is the oldest programme and now covers 1375 Community Development Blocks and serves about 1.7 million women and children. Its strategy is to develop poultry, fisheries, orchards and vegetable gardens and to improve local diets through demonstration of the production and consumption of these foods. Selected villagers, extension workers, health personnel and other block personnel are trained in applied aspects of nutrition with the hope that the demonstration effects of the programme combined with extension services would bring desired changes in the local diet. The participation of Panchayati Raj Institutions and involvements of Mahila Mandals and Yuvak Mandals is an important part of the programme, since participation and self-help are key goals. On the whole, the programme has not fared well in practice. Its "demonstration effect" has not been felt in most areas; irrigation facilities and other inputs for community gardens are not available or are negligible in most areas; school gardens have fared a little better; participation and support from Panchayati Raj Institutions and local leadership has not been adequate; criteria for selection of beneficiaries varies from block to block so that

economic status is not always considered; in most areas, production programmes benefit the middle income groups rather than the poorest; and review and evaluation of the programme at State and Central levels is extremely poor.

(2) *Supplementary Feeding*: The Special Nutrition Programmes for rural areas and the Supplementary Feeding Programmes for urban slums and tribal groups have been in operation for several years. Under them, infants aged up to one year get about 200 calories and 8-10 grams of good quality protein in liquid and semi-liquid forms. Children aged 2-6 years get 300 calories and 12 grams of protein. Women get 500 calories and 25 grams of protein, folic acid, iron and multi-vitamins. Initially planned for 250 days a year, the programme was later extended to 300 days. It covers about 7,000 centres in urban slums (with 100,000 mothers and 1.5 million children) and about 19,000 tribal centres (with 150,000 mothers and 1.5 million children). The available evaluations of these programmes show that they have had serious limitations. Whether the programme was of the on-the-spot feeding type, or of the take-home type, the supplements have tended to become either replacements or substitutes and have not been real supplements. It is also wrong to expect that a child will take food home and not share it with other children or members of the family. The programmes also suffer from all the usual administrative diseases.

(3) *ICDS*: In response to the poor performance of most of the supplementary feeding programmes, the Government of India has now evolved a "package" approach designed to provide services such as health care, immunization, environmental sanitation and supplementary feeding, hoping that this would have a more significant impact on the target group. The organisational framework for the delivery of these services, now called the "Integrated Child Development Services Scheme" has also been evolved. The Scheme is only about three years old.

(4) *Mid-day Meal Programmes*: The mid-day meal programme has been in existence since the early 1960s with about 10 million school-going children as beneficiaries

annually. This has had a limited success; but it does not appear to have fulfilled the expectations that it would improve significantly, not only the enrolment of children in school and their regular attendance, but their nutritional status as well.

Taken all in all, the record of these programmes is far from satisfactory. They rely too much on foreign aid. At best, they are palliatives or charity operations that cannot cure a multitude of economic and social sins. What is worse, they are exercises in tokenism, consume disproportionately large resources and ultimately tend to cloud the issues and distract us from the reality. This does not mean that there is no place for supplementary feeding. It is needed in calamities like famines or floods. There is also a justification for selective and limited supplementary feeding directed at carefully identified target groups at risk. But such programmes have to be planned more carefully and built into an integrated programme of community health care. This is the direction in which we should try to move.

An Overview

3.22 What are the net gains and losses of the last 30 years in improving the nutritional status of the people and particularly of the vulnerable groups like women and children?

(1) There does not seem to have been any significant impact on the nutritional status of children. A comparison of average heights and weights of children belonging to the poor socio-economic groups, as observed in 1955 and 1978 shows very little improvement. If anything, the figures for 1978 appear to be somewhat worse.

(2) The nutritional status of our women has shown no improvement and if anything, seems to have deteriorated to some extent.

(3) The overall nutritional status of the people also does not show any material improvement. It has deteriorated in some respects (e.g. availability of pulses) and probably become worse among groups where poverty has continued unrelieved or even increased.

This implies a progressive erosion in the quality of our human resources. A serious situation of this type can be allowed to continue only at the greatest peril to the future of the nation. We therefore recommend, with all the emphasis at our command, that the most intensive efforts should be made, over the next 20 years, to improve the nutritional status of our people, and particularly of women and children, on the broad lines indicated above. That will lay the foundation of a programme of Health for All by A.D. 2000.

4

Improvement of the Environment

4.01 Like nutrition, a clean, beautiful and hazard-free environment is a great asset to health. A programme for the improvement of the environment, which is the second major support to the health care system, includes the following:

1. Supply of Safe Drinking Water;
2. Proper Disposal of Wastes including Sewage;
3. Improvement of Housing and Settlements;
4. Pollution Control, especially of Soil, Water and Air; and
5. Controlling the Adverse Effects of Industrialization and Providing a Healthy Work-place Environment.

Water Supply

4.02 In 1947, hardly any attention had been paid to the provision of protected water supply to villages, and only 16 per cent of all towns and cities (which covered about half of the total urban population) had this facility. The quantity of water provided was inadequate and the quality of the service, poor. There were also acute shortages of needed materials like machinery, pipes, chlorine or alum. As of 1978, 83 per cent of the

urban population has some provision for protected water supply. In reality, there are several quantitative and qualitative deficiencies. The water supply is often inadequate and undependable. Very often, the quality of water is not maintained and outbreak of water-borne diseases is frequent. The municipal authorities do not have adequate resources to meet the capital and recurring expenditure on water supply schemes; and what is worse, the poorer sections of the urban population have either to depend on street taps which are often inefficient, wasteful and unhygienic or use unsafe alternative sources like wells, ponds or open streams. In rural areas, the position is still very unsatisfactory. As of today, only about 64,000 or 10 per cent of the villages have adequate water supply of acceptable quality (40,000 of them have been provided with these facilities during the plan periods). About 214,000 villages have adequate supply but with pollution risk; 1,85,000 have adequate but unprotected sources; and 1,53,000 are problem villages (i.e. villages with inadequate water supplies or infested with endemic cholera, guinea-worm and other health hazards). The Scheduled Castes still have problems of access to the common village well, and when they have an alternative source, it is generally of poorer quality. Obviously, the progress, especially in rural areas, is far from satisfactory. The very large prevalence of diarrhoea and other water-borne diseases is ample testimony to this.

4.03 It has been estimated that to provide adequate water-supply to all urban areas by A.D. 2000 (when the urban population would be 200 million), an annual investment of Rs. 2,500 million would be needed. For rural areas, the corresponding estimate is Rs. 5,000 million a year. Like all other 'guesstimates', these would no doubt prove to be very much on the low side in course of time. This only highlights the heavy costs involved and the need to step up several-fold, the existing efforts in this area. Very important problems of technology, construction and maintenance will also have to be solved.

4.04 In view of the extreme significance of safe drinking water for health, we recommend that an intensive effort be mounted to eliminate all water-borne diseases by A.D. 2000 by providing

safe and adequate supplies of drinking water to all cities, towns and villages.

(1) In the urban areas, this should be the responsibility of municipalities, which will have to be financially assisted. Their resources will have to be suitably augmented to ensure proper maintenance. Experience has shown that figures of water availability in terms of litres per head can be very misleading. Special efforts would, therefore, be needed to ensure an equity of distribution so that even the people in the lower income groups and slum-dwellers get an adequate water supply.

(2) In rural areas, the local communities will have to be involved in the planning and implementing of water supply schemes, with technical and financial assistance from the State. They should have full responsibility for construction as well as maintenance, and locally available personnel should be adequately trained for the purpose. Appropriate technologies will have to be developed to make the best use of existing sources of water supply, to evolve low-cost treatment methods, to protect water supplies from pollution, and to ensure equality of treatment to the Scheduled Castes.

(3) Drinking water supplies cannot be planned in isolation. They will have to form an integral part of a national policy for the proper conservation and optimal use of all water which is a scarce and valuable resource.

(4) Water supply schemes will have to be accompanied by adequate drainage schemes. Thus water management and not mere water supply, should be the aim.

Sewerage and Disposal of Solid Wastes (Urban)

4.05 Very few of our cities are clean, due to inadequate drainage and sewerage systems, poor disposal of solid wastes, and lack of public education and cooperation. If anything, the quality of these services is deteriorating over the years because

of rapid population growth, mounting costs, growing gap between the needs of these services and the resources of the municipal bodies, and increasing managerial problems. This results in poor sanitary conditions so that control of infection and water-or insect-borne diseases becomes increasingly intractable.

Sewerage Systems

4.06 The sewerage services in urban areas are extremely poor. As of today, only 217 cities and towns (out of a total of 3,119) and only 31 per cent of the total urban population, have been partially sewered and sewage treatment plants can be counted on one's fingers. A survey conducted by the National Sample Survey Organisation in 1973-74, revealed that one-third of the urban households had no latrines whatsoever (it is estimated that seven million households, out of a total of 40 million, use the open ground for defecation). Another one-third had basket service—an inhuman and insanitary form of sewerage. About 25-40 per cent of the night soil remains uncollected; transportation facilities are inadequate; and trenching grounds, where night soil is manually composted with refuse, are ill-managed and continue to pollute nearby soil and water sources and to breed flies.

4.07 An immediate problem is to eliminate the system of basket latrines. This received considerable attention through the recommendation of the Backward Classes Commission (1956), the Malkani Committee, and the Gandhi Centenary Celebrations when a decision was taken to eliminate the system totally in a period of ten years. Some commendable work has also been done, especially by voluntary organisations which are financially assisted by the State. In Gujarat, for instance, about 70 per cent of the dry latrines have already been converted to water-seal latrines and the entire programme is expected to be completed shortly. In Bihar, the Sulabha Sauchalaya Sansthana, a voluntary organisation, has been able to convert about 80,000 dry latrines to the water-seal system and it is hoped that all dry latrines in

the cities of Patna and Ranchi would soon be eliminated. Similar programmes have also been started in other States, notably in Tamil Nadu and Kerala. Although the task that yet remains to be done is vast, this experience gives confidence that it will be possible to eliminate the basket latrine system in the country in about 10 to 15 years. The cost of this programme is comparatively small (estimated at Rs. 3,500 million). But more important are its educational and organisational aspects which should receive due emphasis.

4.08 Equally important and urgent is the need to provide water-seal latrines to those urban households which have no facilities at all. This programme should be implemented side-by-side with that for the eradication of basket latrines and completed in about ten years. The estimated cost of the programme is about Rs. 4,000 million.

4.09 Then comes the long-term problem of providing a good sewerage system to all cities and towns. The costs of the programme will be enormous. A modest estimate of the cost of providing good sewerage systems to the 142 cities with a population of 100,000 or more, places the requirement at Rs. 6,000 million. The cost of providing a similar service to the remaining 3,000 urban areas will be about Rs. 9,000 million. Besides, there are other difficult problems like the availability of the needed quantities of water. In addition, industrial sewerage disposal is estimated to cost Rs. 10,000 million.

Solid Wastes

4.10 The management of solid wastes in the urban areas is also unsatisfactory and shows poor progress over the last 30 years. In many places, the total collection is not more than 40 to 60 per cent of the wastes generated, due mainly to shortage of funds, inadequate transport facilities, bad management and lack of public cooperation. Disposal is mostly by dumping and trenching with night soil which is done crudely and often causes pollution. One of the major achievements of the last 30 years is

the introduction of a scheme to assist municipalities to produce compost from wastes. It has made good progress and about five million tonnes of compost are produced annually at present, as against an estimated potential of 11 million. It is estimated that this programme may need an annual outlay of Rs. 4,000 million.

4.11 We recommend that the following programmes for the improvement of sanitation in urban areas be intensively pursued over the next 20 years:

(1) The system of basket latrines should be totally eliminated by 1990. Side-by-side, water-seal latrines should be provided to all urban households which have no latrines at all.

(2) Good sewerage systems, with sewage treatment facilities, should be established for all urban areas by A.D. 2000.

(3) In view of the high costs involved in Western sewerage systems, alternative technologies should be developed to suit our traditions, life-styles, and resources and to economize on precious assets like water. Every effort should be made to avoid waste and conspicuous consumption.

(4) The existing system is extremely inequitable; and in all future plans, care should be taken to ensure greater equity. Priority attention should be given to the needs of the low-income groups and the poor who should get at least the minimal services needed. The problems of slum-dwellers and of the houseless need to be specially highlighted in this context.

(5) The collection and disposal systems for solid wastes should be modernized and improved. It is essential to emphasize the conversion of waste into wealth and to realise the full potential of compost-preparation and bio-conversion technologies.

(6) The municipalities should have adequate resources and personnel to maintain these systems in efficiency. The small and medium-size towns should get an adequate grant-in-aid to enable them to maintain the facilities, or a separate government agency should be created to maintain water supply and sanitary facilities in these areas.

(7) No programme of water supply, sewerage and solid waste disposal can succeed, or be run economically and efficiently, unless there is full public cooperation and proper education. Special programmes for this purpose should be launched. Voluntary organisations can provide a good leadership in them.

It is obvious that the development of integrated programmes of water supply, drainage, sewerage, and solid waste disposal would be more economic and effective. This should be our policy.

Rural Sanitation

4.12 The problem of rural sanitation has been most neglected. Very little has been done throughout the modern period and most village people live, even today, in primitive sanitary conditions. If anything, the situation has become somewhat worse: while some of the good traditions have died, no modern facilities have been introduced to take their place.

4.13 The problem has several important aspects which will have to be adequately attended to if progress has to be achieved quickly and economically.

(1) In the urban areas, the Western model of raising public taxes and providing the sanitary services through an organised bureaucracy has been adopted. This does not work; but one will have to live with it and improve it as best as one can through the development of alternative technologies and the enlistment of citizens' cooperation and participation. In the rural areas, this model has not yet been introduced; and if it were, the consequences would be still more disastrous because of the poverty of the people. It is therefore necessary to create, right from the start, an alternative model wherein the emphasis would be on self-help and participation rather than on the creation of a bureaucracy. For instance, cleanliness

of villages should be attempted by allocation of responsibilities to families and by ensuring their proper discharge through education and supervision. The alternative of taxing people and creating a service of public sweepers and scavengers will not even get under way.

(2) Improvement of rural sanitation, and especially the disposal of night soil, is a major technical problem. There are wide variations of soil, climate, culture and traditions. New and easy-to-use techniques of night soil disposal will have to be evolved to suit different areas. There must be emphasis on evolving a variety of techniques (or a combination of techniques) to suit the needs of a given locality or different groups in the locality. There has to be a much greater use of animal dung, through the development of bio-gas plants, for producing gas and better manure. As this programme develops, the possibilities of digesting night soil along with animal dung will increase and should be fully exploited. The work done in this area so far is microscopic; and an intensive concentration on this field will pay rich dividends in the years ahead.

(3) Improvement of rural sanitation is also a function, as stated earlier, of proper health education of the rural people. This should receive adequate emphasis.

(4) Programmes of improvement of rural sanitation provide immense scope for manual, unskilled labour. This becomes, therefore, a question of mobilising the people; and if properly developed, it will generate large scale employment in every local area and thereby help to reduce poverty and bring about an improvement in the nutritional status as well. Simultaneously, it will have a tremendous effect on reducing infection and the incidence of water-borne diseases such as gastroenteritis, malaria, and guinea-worm. This, in its turn, will help to improve the nutritional and health status of the people still further. In fact, it would be difficult to think of another single programme which, at so little cost, will do so much to improve health. It should, therefore receive the highest priority. This is why it was greatly emphasized by Mahatma Gandhi.

(5) Programmes of improvement of rural sanitation are best implemented by local communities, with technical guidance and financial support from the State. This should be our policy.

We, therefore, recommend that a massive programme on the above lines should be developed on a priority basis and the objective of improving rural sanitation to satisfactory levels should be fully realized by A.D. 2000. It is estimated that the programme will need an annual investment of Rs. 5,000 million.

Housing and Settlement

4.14 At present, population in the metropolitan cities is growing very rapidly. The cost of providing basic amenities is very high in these areas; and in spite of immense investment on a priority basis, they are becoming more and more difficult to live in. On the other hand, there is comparatively lesser influx in the small and medium-size towns where these costs are far smaller. It is, therefore necessary to create disincentives for people to go to metropolitan cities, to make life and work in small and medium-size towns more attractive, and, through rural development, to reduce the increasing trend to migrate to urban areas. At the other extreme, very small villages, where provision of all basic services will be either impossible or prohibitive in cost, will have to be amalgamated into one another. Measures will have also to be taken to plan all cities, towns and villages properly. A major objective in this should be to eliminate separate colonies of the Scheduled Castes and integrate them in the total community. In short, what we need is the laying down of an appropriate settlement policy and its vigorous implementation.

4.15 There is a close relationship between housing and health. There is an overall housing shortage in the country for such reasons as increase in construction costs, non-availability of

materials like cement and steel, lack of adequate investment and increase of population. The shortage is acute in both rural and urban areas. In the latter, it takes the ugly form of slums wherein squalor, misery and environmental degradation dominate the scene and even elementary civic facilities are not available. At present, the shortage of houses is estimated at about 30 million and it is continually growing. The large programme of housing in the public sector which we have developed through organisations like the Housing and Urban Development Corporation, State Housing Boards, Apex Housing Corporations, Urban Development Authorities, and Cooperative Societies has made little dent on the problem, and especially on the housing situation in rural areas or in urban slums.

4.16 There is no easy solution to this problem. A very important programme would be to evolve a new technology of building low-cost houses through improvement in design, use of locally available materials and evolution of new techniques which require only minimum quantities of steel and cement. In urban areas, there will have to be larger investments in public sector housing and a determined bid to improve or eradicate slums. In rural areas, there is need to provide housing sites to the poor, to grant financial assistance (loans and subsidies), and to help them to build low-cost houses, partly through their own labour.

Pollution Control

4.17 The environment is being increasingly polluted because of population growth, urbanization, industrialization and defective waste disposal. Particularly serious is the pollution of soil, water and air. These are already posing health problems; and if not checked in time, will have grave consequences.

Soil Pollution

4.18 There is an increasing incidence of pollution of food and

water through the large scale use of chemical fertilizers and pesticides. A continuous effort has to be made to replace them by bio-degradable organic manures.

Water Pollution

4.19 Pollution of public water sources by industrial and municipal discharges has assumed serious proportion in some of our urban and industrial zones. For instance, the Jamuna is polluted at Delhi and Agra, the Ganges at Kanpur, Kaveri near Erode and Mettur, the Hooghly near Calcutta, the Mahe in the Baroda region, the Thane-Kalyan creek in Bombay and the Damodar and its tributaries near the Asansol-Durgapur belt. Episodes of 'fish kill' or 'fish migration' have been reported from some of these areas. The dissolved oxygen level in the water of the Ganges near Kanpur and Hooghly near Calcutta has fallen below critical levels in some stretches. Some of the toxicants present in industrial effluents can cause massive destruction of fauna and flora if they are allowed to be discharged into the water courses without appropriate treatment. Among the offending industries are paper and pulp, textiles, distillery, pharmaceuticals, fertilizers, thermal power plants and oil and petro-chemicals. However, it should be recognized that the main culprits in the field of water pollution are the municipalities and local bodies which allow pollution with sewage.

4.20 In order to prevent and control the pollution of the water courses an Act was passed in the Parliament in 1974. By 1979, most of the State had established State Boards for the prevention and control of water pollution. But the progress achieved so far in this respect is uneven and most of the State Boards have failed to take effective action against the offending industries and local authorities. In such cases, however, purely penal provisions are often useless, and better results can be obtained through persuasion and financial support.

Air Pollution

4.21 Atmospheric pollution can become a threat to health in

cities with intensive concentration of manufacturing activities. For instance, over 60 per cent of the industry in Maharashtra State is concentrated in Bombay alone and the Chembur area, a suburb, is severely affected. It is therefore, necessary to adopt a policy of dispersal in the location of industries in the country. Automobiles may be considered a serious source of air pollution in some areas of Bombay and Calcutta. The available data shows that air pollution in India is still largely within tolerable limits. But it is in the larger interest of the country to keep a close watch over the situation and to take effective action in time against all sources of air contamination.

Health and Industrial Development

4.22 During the last 30 years, India has become one of the leading industrial nations of the world. Steps have also been taken to improve the work-place environment. But we still have a long way to go.

(1) In the mining, quarrying and mineral processing industries, about 21 million workers are exposed to silica dust. The incidence of silicosis is high.

(2) In industries using chemicals, workers are exposed to the well known occupational diseases such as blood diseases due to phenol, aniline and lead; and the nasal septum diseases. The varieties of new synthetic chemicals, plastics and polymers, drugs and pharmaceuticals and pesticides being manufactured are also potential hazards to workers.

(3) The increasing work load and subsequent physical and mental fatigue make the workers prone to accidents. The monotony of work, lack of concentration, addiction to alcohol also play a contributory role. The National Commission on Labour (1969) found that, even after 20 years of independence, the health facilities provided in most factories were very unsatisfactory. During the period 1961-67 as many as 3,860 lives were lost due to accidents in factories and

approximately 1.3 million persons suffered from disabling injuries and occupational diseases.

(4) The safety measures and safety equipment are badly designed and inconvenient to use. No serious efforts have been directed towards developing simple, easy to handle and practice safety equipment.

(5) There is no system of universal accident insurance for workers.

There is a price to pay for all industrialization. It is the responsibility of the State to see that this is paid by the industry itself and not passed on to the workers or to the general public through adverse effect on health or water and air pollution. The awareness of this duty exists; and by and large, the industry has been cooperative. What is needed is a careful monitoring of the changing situation, adoption of the needed control measures and their effective implementation.

An Overview

4.23 It will be seen from the preceding discussion that, in spite of their immense significance for health status, programmes for the improvement of environment have received only inadequate attention so far; and while something has been done for urban areas, not even a meaningful beginning has been made in rural areas. These programmes, therefore, deserve to be developed on a very high priority basis over the next two decades. This is particularly true of rural water supply and sanitation.

4.24 The annual costs of the programmes (except for housing and settlement and pollution control for which no estimates are available) is estimated to work out to Rs. 8,500 million for urban areas and Rs. 10,000 million for rural areas or at about Rs. 25 per head of population. This implies a several-fold

increase in our existing expenditure on these supportive services and it is even larger than what we spend on curative services at present. It should be clear, however, that it is this investment and not the expenditure on curative services, that will really raise the health status of the people. The experience of developed countries is valuable in this regard. More than medical care, it was improvement in the living conditions that brought about dramatic changes in the health standards of Europe, UK, USA, decades before medical research began to unfold the root causes of many diseases. The proposed change in priorities is thus fully justified.

4.25 The continuous defilement of the environment over the last 100 years is a great loss to the nation and poses a catastrophic threat to its future. A comprehensive and well-designed programme of protection, enrichment and beautification of the environment (which will have large scale tree-planting as an important ingredient) has, therefore, to be immediately undertaken and continuously sustained on the basis of highest priority. The improvement of sanitation we have suggested is the basic minimum needed in this programme of eco-development and should be planned and implemented against this wider background.

5

Health Education

5.01 Health education, like nutrition and improvement in environment is a supportive service. But unlike them, the effects of health education are indirect, non-quantifiable and difficult to measure. Consequently, it often tends to be ignored. Its significance is, however, crucial.

Concept of Health Education

5.02 The relationship between health education and health status can be easily established. In the last analysis, health is an individual responsibility; if the individual is not health-conscious and does not himself make the necessary efforts to be healthy, no outside agency can provide him with health. As was pointed out earlier, health is not a commodity to be acquired nor a service to be received and an individual is not the object but the subject of health. It is, in reality, a process of knowing, living, participating and being.

(1) The first step in health is knowing or cultivating a health-awareness. A health-conscious individual should know how his body functions, how it can be kept fit, how diseases are caused and how they can be prevented or cured. He should also know what he should or should not do, not only to keep himself healthy, but to ensure that his actions do not

harm the environment or cause illness to others. He should also know how to nurse himself in illnesses and how to offer similar services to others when needed.

(2) The second step in health is living or cultivating a life-style which is promotive of health. For instance, the health-conscious individual has to take physical exercise, cultivate the right dietary habits, avoid excesses and observe a certain self-discipline. This is, of course, quite different from the consumerist attitude to health where an individual gives full license to himself and then tries to buy 'health' through doctors and medicines.

(3) The third step in health is participating in or cultivating a social responsibility for health. An individual must realize that health has a social aspect and that an individual's attempt to be healthy will succeed only, and succeed better, if policies which strive to provide health for all were to be pursued. In short, the health of the individual is to be sought in the health of the society as a whole. He should, therefore, be aware of the social causes of illness and willing to play his role in remedying them.

(4) Finally, health is also a process of being or cultivating interests, attitudes, and values promotive of health. For instance, an individual will have to learn to emphasize promotive and preventive aspects of health and to look upon curative measures as a necessary evil rather than as a prestige symbol. He will also have to develop the right attitudes to pain, to growing old and to death. In short, every individual will have to develop his own 'philosophy' of health just as he will also have to develop a 'philosophy' of life. The two are obviously related because lack of adjustment in life does cause ill-health just as ill-health affects adjustment in life.

Against the background of this wider concept of health, the role of health education at once becomes clear. Health education, like all other education, is a three-fold process of giving information, teaching skills, and inculcating values. It can, therefore, make a vital contribution to an individual's health; in

fact, there can be no health without health education and health-consciousness.

Channels and Agencies of Health Education

5.03 What are the agencies and channels of health education? It will be too costly and too impractical to create a separate agency for giving all the health education which every individual needs. This is all the more so because health education is not a one-shot affair; it has to be continuous and life-long. Health education cannot also be separated from general education. The only practicable policy, therefore, is to make health education a part of the general education which a society organises for all its members. As general education is given at home, in school and in society and through non-formal, incidental or formal channels, the same agencies and techniques will have to be adopted in health education as well.

Children Below Six Years

5.04 Children below three years learn at home especially from the mother. The responsibility for the health education which the child needs at this stage falls squarely on the mother. Even between the age of three and six years, the mother will have to share the responsibility of health education with the pre-school; and the responsibility will be exclusively hers if the child does not attend a pre-school. By the age of six, the health personality of the individual, like his life-style, would have been more than half-formed. This highlights the very important role of the mother in health education of children. In a good educational system, every girl would ordinarily be equipped, in the course of her own general education, to give this education to her children.

Older Children (Age-group 6-14)

5.05 At present elementary education is not universal nor has

health education a prominent place therein. To change this unhappy situation, elementary education should be made compulsory and health education should become its integral part. This will give health education to all children without any additional investment. The emphasis here has to be, not on mere imparting of information, but on doing things, on practical demonstration and on cultivation of values. For instance, if every primary school had sanitary facilities of the type that could be replicated in the village and trained children to use them, rural sanitation would improve very soon. Programmes of meals should be introduced, at least for the underprivileged, malnourished children and they can be used for the educational purpose of improving dietary habits. Programmes of medical examination of children and remedial treatment should also be introduced; and those can also be tools of health education. It will be comparatively easier and more economic to do so in the proposed alternative model of health services. Physical education, sports and games should be promoted. To succeed, good programmes of teacher education and improvement of school plans (e.g. provision of playgrounds and equipment) are needed.

Secondary and Higher Education

5.06 Programmes of health education, suited to the age and maturity of children, will have to be continued through all education at the secondary and University stages. For the grown-up adolescents and youth, sex education and instruction in family planning will have to be provided. Physical education, sports and games should continue to receive emphasis.

Adult and Continuing Education

5.07 Adult and continuing education will be an integral part of every good educational system which will strive to provide life-long education to all. In such a system, health education can

be a part of this programme and thereby reach all adults as well.

Recommendations

5.08 As a long-term objective, therefore, we should strive to improve the existing education system itself and to extend it adequately, to give due emphasis therein to health education and to train the teachers of general education for the purpose.

5.09 The health system has a limited responsibility in general education. It has of course to work with the education system to ensure that health education does form an integral part of general education. But once this is done, the principal task of the health personnel is to assist the teachers in general education, to give health education by devising suitable programmes, training of teachers, production of health materials and conduct of experimental projects.

Role of the Health System

5.10 But this is not the whole story. In addition to the above, the health system has three direct responsibilities which are of a supplementary character. These are:

- (1) health education of the patients;
- (2) organising a massive programme of non-formal health education for the poor and the underprivileged social groups; and
- (3) training of the health personnel to provide adequate health education.

Health Education of the Patients

5.11 It is necessary to remember that the health personnel have

a legitimate responsibility of their own in the field of health education, viz. the education of patients. When a patient comes to a health functionary, he is not satisfied by merely receiving treatment. He also needs education. He would like to understand what his illness is, how it is caused, what the treatment is, how to get well quickly and to avoid the disease in future, and so on. This educative role of a health functionary was emphasized by Mahatma Gandhi when he said: "There is another type of medical relief which is a boon. It is given by those who know the nature of the disease, who will tell the patients why they have their particular complaints and will also tell them how to avoid them. Such discriminating relief is an education in hygiene, teaching the people how to observe cleanliness and to gain health." Helping others learn to care for themselves encourages self-reliance and equality. On the other hand, taking care of others without teaching them encourages dependence and loss of freedom. It is to be regretted that the medical profession most often acts as a dispenser of medical treatment rather than as an agent to bring about better health. We have a great responsibility in imparting health education to their clientele and that every member of the health team must be an educator instead of relegating this responsibility to a health educator alone. None in the health hierarchy, from a Community Health Volunteer to a direction of medical education, can be absolved from this responsibility, especially so in rural areas.

Health Education of the Poor and Deprived Social Groups

5.12 The health personnel have another and immediate responsibility of immense significance to discharge. They must provide health education to the poor and underprivileged social groups who need this education most and whose health status cannot really be improved without it. In our opinion, this will be one of the major responsibilities of the health services based in the community. If a massive programme of adult education is launched side by side, this task will be considerably facilitated

because the health personnel can then get the advantage of the adult education personnel also. But if it is not, they will have to go it alone.

5.13 In organising this health education of the poor and underprivileged social groups, the following points should be kept in view:

- (1) The education of the mothers in health education, for themselves, for their children and for other members of the family (including family planning education) is extremely important. This should be a major responsibility of the MCH services.
- (2) It is necessary to study and understand the prevailing concepts, beliefs and customs about health and disease. Some of these are good; they should be preserved and strengthened. Many others are unscientific and harmful (e.g. not to give water when one has fever or diarrhoea). Similarly, there are many harmful traditions with regard to menstruation, pregnancy, mother and child nutrition and care of the sick. These will have to be corrected through careful instruction.
- (3) There must be some priorities in health education. One should aim initially at changing attitudes and practices which will bring in the highest returns. An attempt to bring about too many changes at once will be self-defeating.
- (4) Often, there are vested interests to keep alive or spread some wrong health notions among the poor. Similarly, the poor are often prevented from utilizing the public services or do not know how to use them. Overcoming such false propaganda and enabling the poor to have adequate benefits from the health services should be one of the important objectives of their health education.
- (5) Another important object of health education is to make people aware of the exploitation by greedy people calling themselves healers. There are some who take advantage of people's ignorance and blind faith and pretend to heal with magic. There are others who go about destroying the eyes

of cataract patients for a profit. Then there are some unscrupulous practitioners of modern medicine who exploit people with unnecessary, expensive investigations and useless and often dangerous injections and lengthy prescriptions. The drug pushers are another dangerous breed who are increasingly exploiting the credulous poor. People need protection from all these types.

5.14 We believe that the trained *dais*, the Community Health Volunteers and Multipurpose Workers supported by the health team, can provide an effective non-formal health education to the whole community. The point to be emphasized is that this will be health education through participation, learning by doing. It will, therefore, be far more effective than school instruction which is generally book-centred.

5.15 It should be emphasized that many of the health problems of the poor can be solved to a large extent through health education. For instance, the most frequent messages they need are related to (1) sanitary disposal of excreta and waste water, (2) control of vectors, (3) use of protected water, (4) production of nutrient foods locally, (5) encouragement of breast feeding, (6) formation of good health habits, and (7) maintenance of good personal hygiene. Then there are specific conditions such as debilitating infections namely tuberculosis, hookworm, malaria, filariasis, leprosy, about which people need to learn. They need to learn how to live with and prevent such infections. Similarly people left with residual effects of crippling, blindness, deafness and other disability need constant guidance to cope with these. Simple health messages communicated effectively can produce excellent results in all such cases; and on the basis of cost-benefit considerations, health education can be a very effective input to raise their health status.

5.16 To be effective, health educators must have a deep sympathy with the poor people, a spirit of humility and innovative approaches. Most of these essential conditions of success are often lacking. For instance,

- (1) One talks *at* them and not *with* them;

- (2) One assumes that they are ignorant or uncultured simply because they are unlettered (which is an error) and gives oneself the attitude of omniscience and infallibility (which is crass arrogance and stupidity);

- (3) One never tries to find out what they know and compare it with what one has to sell;

- (4) One never regards education as a dialogue in which both the teacher and the student learn. Instead, one tends to look upon it as a one-way process in which the health educators are active givers and the poor are the passive listeners; and

- (5) One uses high flown language to hide one's ignorance and to baffle rather than enlighten the learners. A process of mystification of this type is often employed by professionals.

It is therefore necessary that the health educators, who are going to embark upon this process of educating the deprived and the poor should approach their task in a spirit of sympathy, humility and commitment. They should try to find out first what the people know and how they deal with any given health situation; and they should not try to teach anything unless they are fully satisfied that they have something better to offer.

Central and State Bureaux of Health Education

5.17 It is obvious that the health system itself must assume the responsibility of training its personnel to discharge its responsibilities in health education. It is for this, as well as for the responsibility of training teachers in general education, that the Central and State Bureaux of Health Education were created.

5.18 The Central Health Education Bureau functions through its various divisions. The media division brings out regular bulletins, journals and technical reports, helps in the drafting of news programmes on radio and television, and provides background materials for publicity literature. The audio-visual

division assists the Ministry of Information in producing films on health topics and to pictorialise health ideas. The training division runs diploma courses and short-term programmes in health education and is also in-charge of research and evaluation. The State Health Education Bureaux have been established in 20 States and five Union Territories and have similar responsibilities. Besides, there are health education components in almost all national programmes concerned with the eradication or control of communicable diseases and there is also a health education component in the family planning programmes. Despite this enormous input and impressive administrative set up for health education, health attitudes of the people have hardly changed and the programme has hardly made any impact on the situation.

5.19 The reasons are not far to seek. There has been little rapport between the health services and the general education services. The most needy and largest group which needs health education is that of the underprivileged or poor. Neither the general education nor the health systems have been able to reach them so far. A national programme of health education can only advance in the wake of a massive campaign for improving the health of the people through promotive, preventive and curative methods. When such a programme does not exist, a programme of health education alone remains anemic and academic. This is precisely what has happened. It is therefore, both urgent and essential to reorganize and strengthen the Health Education Bureaux as an integral part of the overall programme of improving the health status of the people. This will enable them to discharge their responsibilities adequately.

5.20 Since a major programme for improving the health status of the people will be launched over the next two decades, we recommend that a major programme of health education also should be simultaneously launched on the broad lines indicated above. The two are obviously interdependent and mutually supportive. Needless to say, the central and the most important focus of this new programme will be the health education of the poor and the underprivileged groups which should be organised,

on a priority basis, by the trained *dais*, the Community Health Volunteers, and the Multipurpose Workers and supported by the health team.

5.21 The infrastructure for mass communication is already available with all segments of our society and the techniques of formulation and dissemination of messages has been highly developed and in constant use, especially by the private sector, in the promotion of ideas and sale of goods even in the remotest village. It should be possible to use these same media and techniques for the promotion of good health practices.

Unfortunately, the use of mass media has been sadly neglected so far in health education. It should be used extensively in the future, and adequate financial resources should be allocated for this purpose. The dissemination of knowledge on health and health practices should be left to professional bodies and the role of the health services and personnel should be chiefly those of technical advisors to those who have expertise in delivering the message.

III

The Alternative Model of Health Care Services: General Principles & Organisation

6

The Alternative Model: General Principles

6.01 In this part of the Report, we shall present the alternative model of health care services which, in our opinion, will best promote the comprehensive national policy on health. The present Chapter will discuss the broad general principles underlying the model and the next, its organisation.

The Existing Model

6.02 The existing model of health care services has evolved over the last 150 years and some of its major features are rooted in the circumstances of its origin and growth.

(1) These services were first organised by the British administrators who totally ignored the indigenous belief systems, life-styles and health care institutions and practices which formed an organic unity. Instead of building on these foundations and evolving a new system more suited to the life and needs of the people with the help of modern science and technology, they decided to make an abrupt and total change by introducing the Western system of medicine *in toto*. This decision created a wide gulf between the culture and traditions of the people on the one hand, and the health services on the other. It also deprived the latter of several

valuable contributions which the Indian tradition could have made. This loss is still not made up, notwithstanding the recent support to indigenous systems of medicine which is only a marginal effort in this direction.

(2) The existing services began with provision of health care to overseas personnel located in India, mostly in towns and cities. Later on, these services were extended to the upper and middle classes of the Indian society who acted as intermediaries and interpreters between the rulers and the ruled. It was believed that the improvement in the health status of the people at the top layers of society would naturally trickle down to the lower layers in due course; and even the concept of a direct large-scale programme to improve the health status of the common people was not accepted. This urban-biased, top-down, and elite-oriented approach of the British period still continues to dominate the health services, in spite of the large expansion of the Primary Health Centres during the last 30 years, which has considerably extended the outreach of the services to the rural areas and to some social groups not covered hitherto. The bulk of the expenditure on these services is still incurred in urban centres, their benefits are still largely skewed in favour of the upper and middle classes; and they still fail at the periphery i.e. do not reach the outlying villages and the poor people.

(3) The British administrators began only with the provision of curative services; the establishment of hospitals and dispensaries and the training of doctors, nurses and other personnel needed for them. Later on, programmes for improving environmental sanitation in towns and cities and of immunization against communicable diseases were also developed to some extent. But they never had the prestige of the curative services nor any comparable financial support. In spite of all the talk to the contrary and the efforts made in the last 30 years to develop promotive and preventive programmes, this overwhelming curative orientation of the health services still continues to dominate the scene.

(4) Faithful to the original model from which it was developed, the system is essentially based on urban hospitals. There are now over 6,000 hospitals in the country with about 4,50,000 beds which are almost exclusively located in towns and cities and consume a substantial proportion of the funds available (Please see Statistical Table No. IX). A typical urban hospital is a large complex offering multiple services and many specialities and expending vast amounts for the maintenance of its facilities and staff. On paper, it offers specialist services which would not perhaps be available in smaller units. In practice, it generally serves as a large scale, very expensive, primary health centre for the population in its proximity. The system is also highly centralized and bureaucratized so that it is not able to cope with problems of distance nor to organize good referral services.

(5) The system depends too much on doctors whom we have not been able to give the right kind of training and who, by and large, are still unwilling to go to rural areas. The system is also highly medicalised like its counterpart in the West and instead of being regarded as necessary evils, injections and drugs are becoming status symbols of a consumer society. The cultural alienation of the medical profession has led to over-sophistication and mystification. There is a continued over-emphasis on urban, Western-oriented, curative health services at the cost of the more important promotive, preventive and simple curative aspects of community health. There is always a dangerous turning point at which the over-production of drugs and doctors creates a vested interest in the continuance or expansion of ill-health. It is not generally recognized that we are dangerously close to this explosive point.

(6) There is no involvement of the community.

(7) Like our mixed economy, the health care services also are based on the principle of a simultaneous operation of the private and public sectors. But it has not yet been possible to demarcate the roles of the private and the public sector and the system suffers from several evils that arise

from the overwhelming profit motive of the private sector, both medical and pharmaceutical.

We pointed out earlier in Para 1.13 that a linear expansion of this model and the consequent pumping of more funds into the system will merely add to the existing waste and make the ultimate solution of our health problems more difficult. We are also convinced that mere tinkering with the system, through well-meant but misguided efforts as better training, better organisation, or better administration, will also not yield satisfactory results. This is precisely what has been done during the last 30 years; and the meagre results obtained, is a strong pointer to the futility and wastefulness of continuing the same policies. The conclusion, therefore, becomes inevitable that what is wrong with the present system is its basic principles and approaches to the health care problem. The urgent need of the day, therefore, is to substitute these principles and approaches by more appropriate ones and to create an alternative model of health care services more suited to the life and needs of the people. This should be fully accomplished, in a phased and planned manner, by A.D. 2000.

Basic Principles and Approaches of the Alternative Model

Strong Community Base

6.03 The first basic change we propose is that the urban-biased, centralized, bureaucratic, over-professionalized and top-down approach of the existing system should be abandoned and that the new system of health care services should be strongly based in the community so that the people could be intensively involved in planning and implementing programmes for their own health care. By a community, we mean a population of about 100,000 which will have a Community Health Centre, with a sub-centre for every 5,000 population and a village or neighbourhood service centre for every 1,000 population. We

are of the view that most of the health problems of this community should be taken care of by the community itself and that more than half the expenditure on health services should be incurred within this community. It is from this firm and solid base that the health services should rise to the top, providing supplementary, referral, specialized, and super-specialized services at the district, regional, State and national levels.

6.04 The following are some of the reasons why it should be possible to devise an economic and effective health care system whose benefits can reach all the people.

- (1) A large number of common illnesses are self-curing and/or self-limiting and need only symptomatic treatment with simple remedies, whether herbal, indigenous medicine or allopathic.
- (2) A majority of major illnesses consist of communicable diseases like gastroenteritis, dysenteries, malaria, filariasis, leprosy and tuberculosis. These are amenable to control by simple and economic preventive measures, can be readily diagnosed, and are amenable to treatment with cheap, safe and highly effective drugs.
- (3) Several action-research studies undertaken in various parts of India and other countries reveal that, given the necessary encouragement and guidance, the community can itself look after the majority of its preventive, promotive and simple curative health problems, leaving only a proportionately small quantum of the difficult curative problems to be dealt with by the more sophisticated referral services.
- (4) That health volunteers from the community (CHVs) can effectively undertake many of the functions which fell previously within the purview of the paramedical and even medical personnel.
- (5) Even the referral curative problems can be graded. The majority are simple and only a few require highly specialized care.

6.05 The manner in which the alternative model will actually

function within this community of 100,000 is described in detail in Paras 7.02 to 7.39 of the next Chapter. It will be seen therefore that this model meets both the conditions suggested above, viz. (1) most of the health problems of the people in the community are taken care of in the community; and of the total expenditure of Rs. 30 per capita proposed for these services, as much as Rs. 19 will also be incurred within the community. It is therefore obvious that the community is no longer the 'periphery' but the heart of the system.

There is no question now whether the services 'reach' the people. They 'begin' with the people and are located in their midst; and it is from this strong base that they rise to the district and regional levels for the highly specialized treatment of rare problems.

Community Health Centre Hospital

6.06 The second major change we propose is that the almost exclusive emphasis which is placed on large, urban hospitals in the existing system should be eliminated by establishing a small, community hospital of about 30 beds in every community of 100,000 people.

6.07 The large urban hospitals which soak up a large proportion of the allocation for health are generally impersonal, unwieldy, unmanageable institutions which profess to give sophisticated health care at high cost and often fail to deliver even simple curative service. Their benefits are generally small, especially if one considers the vast investments that go into them.

6.08 A major reason for the failure of these high cost, low efficiency institutions is the penchant for size and the latest Western sophistication which adds considerably to their mystique and reputation. Three decades ago, the majority of the medical and surgical problems of the community were tackled reasonably efficiently by general physicians and general surgeons with the assistance of the family physician at a reasonable cost. Due to a vast increase in medical knowledge, we now need specialists and

superspecialists. Fortunately, the bulk of the increase in medical knowledge in various fields, when once crystallized, can be distilled and practised by a new breed of 'general specialists' with great advantage to the patients, leaving only a few of the most difficult problems for the superspecialists.

6.09 One of the major reasons for the inaccessibility of the existing hospitals to the majority of our people is the problem of distance. Hospitals, whatever their size, receive the majority of their clientele only from an area which is within easy reach. Although the district hospital is better placed, it still draws most of its patients from a limited surrounding area. It is not only the cost and difficulty of transport for the patient, but also the relatives who must accompany him. The impersonal atmosphere and culture of the staff of such a hospital is very alien to the poor villager who feels ill at ease. The lack of residential accommodation for the relatives poses a further problem. Little wonder that the majority of our people cannot utilize these hospitals even when in need.

6.10 The present Primary Health Centres (PHCs), though in close proximity to the people, do not have the personnel or facilities which may even remotely make them claim to be hospitals. This, combined with the apathy and indifference of their staff, results in a gross under-utilization of available beds.

6.11 Under the circumstances, if we are to make hospital referral facilities available to the majority of our people, especially in the rural areas, it is essential to have small yet efficient general hospitals placed within the community itself. The advantages of such a small community hospital which is a part of the Community Health Centre will be (1) physical proximity to the people; (2) greater cultural acceptability; (3) personal attention as a result of small size; (4) facility for relations who can accompany and stay in the adjoining *dharm-shala* and feed and take part in the nursing care, thus leading to a humane approach; (5) avoidance of the inhuman, impersonal approach of the large hospital and a greater interplay of human inter-relationship, not only between patients and staff, but also between the members of the staff themselves; and (6) elimination

of expensive administrative overheads. The large number of medical and nursing staff and their families living together within a campus will provide social and cultural amenities and avoid social and intellectual isolation which is one of the major problems of the staff working in the existing Primary Health Centres. The staff who will work as a team, will also have greater professional satisfaction because they will be able to command most of the facilities necessary for good professional practice. This will avoid the present frustration not only of working in isolated Primary Health Centres, but also the equally great frustration of working in large hospitals.

6.12 It will be easy to see that such a hospital will become a part of the community for whose health it will feel a personal responsibility. It will also provide considerable employment potential within the community and an avenue for promotion for CHVs and MPWs. The hospital and its staff will be personally responsible for the efficient operation of the sub-centres in their community whose staff they have trained, and from whom they will receive their patients. The hospital which will deal with the vast majority of all surgical and medical problems of the community together with its *dharmshala*, will be ultimately cheaper than the larger district or city hospital. It will also decrease the load of the district and city hospitals thus reducing the cost of maintaining their highly expensive beds.

Integration of Promotive, Preventive and Curative Services

6.13 The third major change we propose is that the almost exclusively curative orientation of the existing health care services should be eliminated and the promotive, preventive and curative functions be integrated at all levels of the alternative system viz. the District Health Centre, the Community Health Centre, the sub-centre and the village/neighbourhood service centre.

6.14 It must be admitted that the principle is not new. It may

be argued that it is a part of the existing policy and that it is already being implemented over the last 30 years. This is true. We would, however, like to point out that we have implemented the policy very badly and that there is a wide gulf between theory and practice in this regard. For instance, there is on paper a policy that promotive and preventive work should have priority over curative activities. In practice, the domination of curative work continues undiminished. In theory, the curative, preventive and promotive activities of the health care system are all supposed to be integrated. The practice, however, is very different and the health services really function as two sectors. On the one hand, we have a concentration of modern, expensive, curative medical facilities and professionals in cities. On the other, there is a conglomeration of semi-professional and paramedical personnel, based in Primary Health Centres in rural areas, which is expected to provide preventive services but is actually delivering poor quality medical care. Neither sector has been entirely successful in improving the health status of the population. The first is almost wholly concerned with curative medicine and is situated so as to more or less meet the needs of well-to-do segments of the urban population. The second is theoretically designed to be more concerned with the preventive and promotive aspects of health care. Unfortunately, in the face of massive poverty, hunger, and financial as well as administrative neglect of its programmes, even motivated personnel find themselves making largely futile gestures of preventive and curative work reaching only 10-15 per cent of the people. The result is an inefficient and expensive curative 'sector' with an equally inefficient, and inadequately financed preventive 'sector'. It is necessary to learn from this experience and to see that our earlier mistakes are not repeated.

6.15 From the detailed description of the organisation of the alternative model given in the next Chapter, one thing will become clear. We have integrated the promotive, preventive and curative aspects at all levels, the District Health Centre, the Community Health Centre, the sub-centre and the Village Centre. This will do away with the existing dualism between an almost exclusively curative, urban sector and a rural sector which tries

to do some promotive and preventive work. The main question is whether this proposal will really work in practice and whether in spite of this change in theory, the system will not continue to be heavily oriented to the curative approach. This possibility cannot be ruled out. We would, therefore, like to emphasize that we must always bear in mind the danger that the dramatic, personalized and more lucrative curative service will overshadow the less dramatic but far more important preventive and promotive services. We must, therefore, take suitable measures to correct such imbalances which invariably creep into all health systems and are a major cause for the ineffectiveness of our existing health services. One such measure is proper allocation of resources and provision of necessary monetary incentives, status, and promotional opportunities to those working in the preventive field. Instead of the preventive and social medicine departments of our medical colleges being the most under-valued departments, they should be the stepping stones for the senior-most cadres of our health services. Only then will they attract the talent necessary for the most important part of our health system. It is this cadre which should, after adequate practical experience in the community and training in managerial skills, be in the line of promotion to the highest administrative and executive health posts in the States and at the Centre. The posts of the Medical Officer in charge of the Community Health Centre and the District Health Centre could, with advantage be filled by someone trained in preventive medicine, epidemiology and health management. If, on the other hand, this higher post is to be occupied by a senior medical officer who may be a surgeon or physician, he/she will have to undergo similar training before taking charge of the Centre.

Redefinition of the Role of the Doctors and Drugs

6.16 The fourth major change that we propose is to redefine the position of the doctor and drugs in this new model of an integrated promotive, preventive and curative approach to health care. In an exclusively curative model, the doctor and drugs

naturally get central positions. This is so in the existing health services because they are mostly curative or 'ill-health' services. The Bhore Committee tried to move away from the exclusively curative model. But it still placed too heavy an emphasis on doctors which, if anything, has increased rather than decreased in the last 30 years. In the Western model of health services, which we adopted long ago and to which we still continue to be loyal, health is looked upon as a commodity and the level of health is equated with the intensity of consumption of drugs and services. Consequently, doctors and drugs become status symbols of health and quality of health services comes to be measured by the number of doctors per 1,000 population or the value of drugs consumed per head. If we propose to move away from the curative model and the consumption-based concept of health, the position of doctors and drugs will have to be redefined. If we do not do so, as we pointed out earlier, we stand in danger of converting doctors and drugs into a strong vested interest in ill-health.

6.17 In so far as the doctor is concerned, his existing position will be affected in two ways in the alternative models:

- (1) He will shed his responsibility for many simple promotive, preventive and even curative services which will be taken over by the CHVs and MPWs in the community; and
- (2) He will also have to share some of the more professionalized responsibilities with other members of the health team who will now be employed in larger numbers and given a comparable status.

In other words, the doctors will still continue to play an important role in the new health care system. But this will not be over-dominating and will be confined more and more to the curative aspects of the referral and specialized services for which they are trained. This will be good, not only for the system, but the doctors themselves.

6.18 With regard to drugs, we are of the view that every effort must be made to ensure that the profit-motivated private drug

industry does not become a vested interest in ill-health. We must not glory in the fact that our drug manufacture has increased from Rs. 100 million in 1974 to Rs. 10,500 million at present and may rise to Rs. 20,000 million in a few years. Drugs once produced are not going to be dumped into the sea and people will swallow them, whether they need them or not. Drugs must therefore be looked upon as necessary evils rather than as prestige symbols. The production of commercial drugs should therefore have to be strictly related to our real health needs, and we should resist the pressures to define our health needs in terms of drugs produced. Similarly, we must emphasize basic drugs, cheap and easy-to-use preparations and traditional home-made remedies. The village people may also be encouraged to cultivate and grow medicinal herbs which are of use in day-to-day illnesses; and so on. Of course, this will not be an easy thing to achieve. A good deal of damage has already been done by the wrong prescribing habits of the doctors and the vested interest propaganda of drug producers so that the health care system is highly medicalized already and tending to be more so. Even illiterate villagers have been brain-washed to demand an injection when a simple tablet will be more effective. But there is no escape from changing wrong value systems if the health status of our people is to be really improved.

Democratic, Decentralized and Participatory System

6.19 The fifth important change we propose is that the existing model of a highly centralized and bureaucratic system which treats people as objects of health services and does not allow participation, should be substituted by another model which would look upon the people as subjects of health and would be democratic, decentralized and participatory. For this purpose, we have suggested that all the integrated health services upto and inclusive of the District Health Centre should be placed under the Panchayati Raj Institutions. The details of our proposals will be found in Paras 7.29 to 7.39 of the next

Chapter. We realize that Panchayati Raj Institutions do not exist in every part of the country and that, even where they exist, they are not always functioning in a healthy condition. We, therefore, recommend that where good Panchayati Raj Institutions do not exist, some alternative method of constituting representative committees of the people at the District, Block and Village level to manage health care services must be designed. We believe that such decentralization is essential and that the people should be placed in effective charge of their health services at these levels. It is our considered view that the political aspects of health services are crucial and that these services will reach the people only if the people have the political right to control them effectively.

6.20 One serious objection has been raised in this context. It has been argued that there is no 'community' at village, sub-centre, Block or District levels. At each of these levels, a small elite group (based on class, caste, income, wealth, education or political power) is in the saddle and that the tyranny of this small oligarchy increases as we descend to lower levels. There is, therefore, a possibility that the vesting of large power in the community at this stage may make matters worse rather than better. We do not share this apprehension. We think that adequate safeguards can be designed by creating a vigilant public opinion and through careful supervision by Central and State authorities. The decentralization will not make matters worse (things could not have been worse anyhow); but given adequate vigilance, they could be infinitely better.

6.21 A popular cliché widely employed today is that of community participation which means that the community should help the health services and facilitate in carrying out of tasks within their ambit. We feel it is unlikely that the community will undertake such activity if the financial resources and administrative control of the health personnel are retained by an external agency. On the other hand, if the financial and administrative control and the burden of health care is squarely placed on the shoulders of the people themselves, there is no question of their non-participation. The people will now feel

that the health care services belong to them. They will insist on the proper discharge of their duties by the health services and full return for the funds they invest.

6.22 This alone can cure the system of the consequences of over-bureaucratization and over-centralization. The present approach of employing an extraneous health team to carry out what are essentially community functions has demonstrated that this generates a sense of helplessness and dependency and prevents the development of community action for its own health care. It has also been demonstrated that regardless of the higher skills of this extraneous staff, they are unable to carry out the functions which can only be undertaken by the community itself. There is ample proof that, when the organised health services, whether public or private, try to penetrate the community and take over what is legitimately the community's own functions, they retard community health action and vastly increase the cost of such activities. In the public sector, this was demonstrated by the lowered mortality due to gastroenteritis and a much higher rate of detection and regularity of treatment for diseases like leprosy and tuberculosis when part-time community health volunteers trained for only a few months took over from the more highly trained full-time government doctors and uni or multipurpose workers. It has also been demonstrated by several studies that the treatment of the majority of common illnesses can be effectively and safely carried out by the community health volunteers at a cost of approximately Rs. 250 per month for a population of 1,000 utilizing about 15 to 20 drugs which are cheap, effective and safe for them to handle. If a qualified doctor tries to carry out this function, the total cost would be about Rs. 2,000 per month and the services delivered will neither be as safe nor as effective as that of the community health volunteers. The people will also develop a sense of dependency on expensive medicines and injections which they equate with the doctor as improved health care. Despite the high cost, the doctor will not look after the most important preventive and promotive aspects of health which is a major function of the community health worker. He will also be limited by the absence of even elementary investigative

facilities for his curative service which he will often try to cover up by dangerous shotgun therapy rather than lose the patient to a referral centre. The poorest sections of the community will not be able to afford his services except in dire need when they will have to take recourse to the money-lender. We feel that the demand from the medical profession as well as the lay public to produce a doctor for each village will only result in a further deterioration of health services while increasing its cost manifold.

6.23 This does not mean that the community as it exists today will automatically take over the health functions which fall within its purview. Unfortunately, the community today is generally a listless organism, the result of generations of neglect and exploitation both from outside and within. It is however obvious that no one else can undertake the functions that belong to them. Activation of the community requires a major social and political change so that every member has a stake in his own and the community's welfare. Only then can a radical change be brought about not only in health, but also in other fields like agriculture, irrigation and education. It is common observation that where the spirit of self-help exists or can be created even in a small measure in any community, a remarkable transformation in health status can be brought about even under existing conditions.

National Orientation

6.24 It was pointed out earlier that the British administration totally ignored the culture and traditions of the Indian people and imported the Western system of medicine *in toto*. Even the Bhore Committee (1946) was silent on the subject. The sixth change we propose to introduce therefore, is to give a national orientation to the health care system by the incorporation of the culture and traditions of the people. In this our policy has to be, not chauvinistic, but rational. We should examine our tradition critically and preserve those elements which are good, have

stood the test of time as well as of modern science, and which, in a way, are India's contribution to human civilization. On the other hand, we should not hesitate to modify or even throw away those elements which may be found to be obsolete or harmful. We should refuse to borrow harmful traditions. But there should also be no hesitation to borrow good things from Western culture and assimilate and make them our own, just as one assimilates food and converts it into one's own flesh and blood. If we do this, we would have created a national system of medicine which will be our own in spite of the fact that it has incorporated several elements from outside and thrown out even larger elements from within. It is in this sense that the creation of a national system of health care is a far broader concept than mere support to indigenous medicine.

6.25 There are five major contributions which our traditions can make to the development of values which underline the alternative model of health care:

(1) The basic philosophy of our tradition, with its *ashram* concept of stages in life can prepare an individual better to accept life and death; he grows up as a disciplined young man (Brahmacharya); lives his life fully in adulthood (Grihastha); adjusts to old-age and begins to withdraw from active life (Vanaparastha); and finally becomes totally uninvolved and gets ready to meet death (Sanyasa). The more widespread such outlook becomes, the better will be the basis of health among the people, because it will inculcate the right attitudes to pain, to growing old, and to death.

(2) Another valuable aspect of our tradition is its non-consumerist approach to life which is in total contrast to the consumerist civilization of the industrialized West. Our tradition would make health an individual responsibility and root it in simplicity and self-discipline. The concept of health in the industrial civilization is that of a commodity. This model has created its own problems even in the affluent countries and health is becoming a costlier and rarer commodity all the time. For developing countries like ours,

this model can only be a disaster. A return to our own tradition in this regard is the only road to good health.

(3) In our tradition, health services are essentially an individual and community responsibility; each community organised its own health services and maintained them and the State had no hand in the matter. We have now borrowed the concept of State support for health services with a vengeance. The sense of individual responsibility has thus begun to be eroded; and we are not allowing the community to undertake even those services which it alone can organise, and have created an attitude of total dependence on a State which is incapable of providing the services. What we have to do is to combine our traditional concern for community participation with discriminating but substantial State support.

(4) Yoga can be a powerful instrument for physical and mental health. It needs to be popularized through the educational and health systems.

(5) Our tradition places a strong emphasis on simple but effective things such as naturopathy, the use of simple medicines, the practice of growing herbs needed in day-to-day illnesses in backyards or other places in every locality; games and sports which require little equipment or space; and so on. These valuable ideas should not be allowed to die out in preference to the costly life-styles with which a profit-motivated capitalist civilization tries to encourage consumerism.

The best inspiration for the preservation and development of these traditions comes from Mahatma Gandhi and Pandit Jawaharlal Nehru. Gandhiji highlighted the great and abiding value of our good traditions and the need to preserve them, although he was always ready, to borrow valuable things from other cultures and to abandon the evils within our tradition. Pandit Jawaharlal Nehru pleaded for borrowing modern science and technology without which national development was not possible, but insisted that these should be adopted to suit our life and be inspired by our spiritual values. It is in this spirit of

combining the best of our traditions with modern science and technology that we should attempt to create a National System of Medicine for ourselves.

Indigenous Medicine

6.26 As a part of this programme of giving a national orientation to our health services, it is also necessary to provide adequate support to the different systems of indigenous medicine and to move away from an exclusive reliance on the allopathic model. From this point of view, we make the following recommendations:

(1) While each indigenous system should be allowed to retain its identity and grow according to its own genius, an effort should be made to ultimately develop a national system of health care in which all the different systems can make their own unique contribution. This 'synthesis' is not an 'integration'; but it is also several steps ahead of the present situation in which the different systems co-exist in bitter competition with one another, without producing any dent on the overall situation.

(2) There are now about 300,000 registered practitioners of the indigenous systems and probably an almost equal number of unregistered ones. The vast resource should be fully utilized in the development of the national health care system.

(3) Today, people make a pragmatic use of both modern medicine and surgery on the one hand and indigenous medicine on the other. This is the right approach. It will have to be developed further on a scientific basis and in the light of empirical evidence.

(4) A synthesis of the different systems (by which we mean the utilization of their remedies, cures and methods) has already begun with the Community Health Volunteers Scheme which incorporates a number of indigenous remedies. These will have to be evaluated and modified in the light of

experience. This approach to synthesis can be extended to the research level also. Collaborative research has a major role to play in this.

(5) At the teaching level, all Ayurvedic colleges now offer some education in Western medicine. By the same token, colleges of modern medicine must offer brief courses to introduce the students to relevant portions of indigenous systems. All colleges, irrespective of the system they teach, should offer the same preclinical subjects. In course of time, all medical colleges and other institutes training medical and health personnel will teach one and the same system of medicine with the individual systems being offered as some of the specialisation courses at post-graduate level.

(6) At the health care delivery level, synthesis has to be a well-planned process with a singularly efficient monitoring and evaluation system. There are a few institutions even now which offer such integrated care to patients using both indigenous and allopathic systems as and when necessary. Some, like the medical faculty at the Banaras Hindu University, offer a choice of services, Ayurvedic or Western—to all patients. Both the units make use of the same diagnostic facilities. Similar units may be started at as many places as possible. Initially, hospitals, preferably those attached to medical colleges, should have alternative outpatients and inpatients departments. In course of time, medical graduates from any medical college would be able to provide such multi-system care.

(7) Apart from all this, it is necessary to create a climate for synthesis. All public pronouncements with regard to health must be aimed at convincing people of the need for a national system which could bring together the best of all systems. Most importantly, an exchange of opinion among the experts in all systems should be initiated and an appropriate atmosphere for unantagonistic discussion created.

Finance

6.27 In the present system, we have adopted a very costly model

from the affluent West. Some of the developed countries are already spending about 6-9 per cent of their GNP on health services and the costs are mounting still further. In fact, we have adopted a model which even the richest countries of the world find difficult to finance adequately. On the other hand, we are not giving adequate priority to health; and we are not spending even those amounts on health care which we ought to have spent at the present level of our economy. This creates a very unsatisfactory and frustrating situation. The seventh change we are proposing therefore is that we should adopt an economic model but spend liberally on it so that we realise the goal of health for all by A.D. 2000.

6.28 A close examination of the alternative model proposed by us will show that it is far more economical than the present system. At this point, we must strongly contradict the common assumption that cost and quality go together. It is our claim that our model is more economic and also more efficient.

6.29 A costing exercise we did to ascertain the approximate costs of this model when fully developed is given below:

**Estimated Recurring Expenditure (at present prices) for
the Alternative Model (A.D. 2000)**

<i>Level</i>	<i>Estimated cost per capita (Rs.)</i>
1. Community	6
2. Sub-centre	7
3. Community Health Centre (at 100,000 population)	6
	19
4. District Health Centre (at 1 million population)	3.5
5. Specialist Centre (Regional) (at 5 million population)	3.5
	7.0

6. Special Institution for Training & Research	1
7. Training Institutes	2
8. Health Administration	1
	4
Grand Total	30

6.30 It needs to be pointed out that this cost calculated at a very liberal level is much lower than in other models (e.g. the Bhore Committee proposals). It is certainly much less than the cost of creating a Western model of health service by linear expansion. The economies have become possible, not because of any reduction in the optimum health services needed, but on account of the new approach adopted here in which manpower, skills, facilities and materials are matched to the requirements which differ radically at different levels of the health system. The community component which comprises over 90 per cent of all health care does not require skilled personnel or expensive medicines which are chiefly required in the referral part of the curative service. Even in the referral part of the service, the cost varies widely. If referral services are also graded according to the requirements of skills and facilities, by far the largest number would be at the cheaper community sub-centre level, while the beds for the superspecialities which probably cost 10 times as much would be very limited in number. The burgeoning cost of the existing health service is not because of the true needs; these costs are the result of unnecessary expansion of skilled manpower, attempt at excessive sophistication at all levels and excessive use of expensive drugs and equipment and the deployment of these in areas where they are not necessary.

6.31 In spite of this heavy reduction in overall costs, it must be emphasized that the country will be called upon to spend much more money on health services than at present. The basic point, however, is that these larger sums are within the reach of practical policy.

6.32 To sum up, our basic strategy in financing the health care system, inclusive of its support services, can be summed up as follows:

- (1) The total costs of the proposed development should be reduced by the adoption of alternative model without allowing the quality of health services to suffer;
- (2) We should spend more on the development of health services (including the support services) than we do at present.

It is possible to indicate a specific target for this enhanced expenditure on health services, including family planning. Education and health are both investments in man and therefore deserve the highest priority in all development. It is difficult to determine the *inter se* priority between them and we recommend that they should have the same priority. The Education Commission had recommended that education should receive about 6 per cent of the national income and we suggest the same target for health also (at present, the expenditure on health is much less than that on education). Within the next 20 years, the national income per head should be doubled (at constant prices). It would thus be possible to increase the expenditure on health per capita to about six times its present level. This will be able to more than adequately cover the cost of the proposals we have made in all fields, both recurring and non-recurring.

7

The Alternative Model: Organisation

7.01 The various levels at which the new alternative model would be organised are:

1. The village neighbourhood level health services for a unit of 1,000 population;
2. Health services at the sub-centre level for a population of 5,000;
3. The Community Health Centre at the 100,000 population level;
4. The District Health Centre for a population of 1,000,000;
5. The Specialist Centres for a population of 5,000,000; and
6. Training Institutions, Special Institutions for Research and Training, and State and Central Health Administration.

In this Chapter, we shall discuss the organisation of the proposed alternative model at the first five levels (i.e. from village to the region).

The Village/Neighbourhood Level Health Services

7.02 The smallest unit of health care in the

alternative model is a population of 1,000.

The Community Health Volunteer (CHV)

7.03 This unit will be in charge of a Community Health Volunteer (CHV). He is not an alternative to the community's involvement in health care. Instead, the CHV is a member of the community who is delegated to undertake certain tasks which require special skills, time and attention. The major health activities like nutrition, water supply, sanitation and improvement of environment can only be undertaken by joint community action. Few of the special tasks assigned to the CHV can be achieved by this functionary unless he or she has the support and approval of the community.

7.04 The use of local persons from the community to undertake many of the health functions previously performed by the medical and paramedical professions is a relatively new concept and is contrary to the general belief of the health professionals and the people themselves. The ability of semi-literate or even illiterate persons to undertake the majority of health functions hitherto undertaken by fully trained health functionaries has been amply demonstrated by various projects in India and other countries. The reason for their success is that the majority of such functions are of a simple nature and their skills can be readily acquired by anyone after a few weeks or months of training. The reason why these community workers are often more effective than their fully qualified counterparts is not only because of their ready availability due to their location within the community, but also because of their cultural affinity with the people they serve. The work of a CHV is not merely a job but a social function and the reward is as much in increased prestige and satisfaction for herself, as in being able to help her own people. The intimacy with which such a worker can approach people for family planning, maternal and child health or for immunization cannot be achieved by external functionaries however well qualified.

7.05 The CHV-to-population ratio would depend on the

number and extent of functions that need to be performed by such workers. In the initial stages one CHV per 1,000 population may be adequate. But as their capabilities improve they will be required to undertake an increasing number of tasks. At the end of five years, the CHVs should be able to take over the majority of the functions assigned to this level—preventive, promotive and curative. Since the CHV is a part-time worker, two CHVs will be required for every 1,000 population. It will be preferable to have two part-time workers than a full-time worker, as this work should remain more a social than a professional function. When there is only one CHV in a community, it is important that this be a female as the majority of the tasks, at least in the early phases, will have to deal with women and children, the segment of the population at the greatest health risk. The second CHV, when appointed, may be a male.

7.06 The selection of the CHV is of great significance. The present community, dominated by a few individuals, is not aware of the potentialities of its own efforts, and is not convinced of the effectiveness of a simple worker to look after such an important function as health. It may well perceive this as another scheme for providing some additional income to one of its members, often belonging to the dominant group or the educated unemployed, generally a male. Neither social status nor level of education are important factors in the selection of a CHV though an ability to read and write in vernacular is an asset. Most social work comes naturally to some persons in all communities. While this may be difficult to define, all communities will readily point out a few such persons within it. Out of this group further selection should be based on literacy, lack of encumbrances like minor children or too advanced an age. A middle-aged woman, preferably a widow who has older children, often proves a good choice as her advice about pregnancy and child care is more respected in a traditional community than that of a more educated younger girl. There is also the advantage that such a woman will not leave the community and will work with interest as she has regained a useful status therein. Caste should not be a barrier even at the cost of a lower educational level for there is a greater chance that the underprivileged

will be better served by a person of their own caste.

7.07 The principle functions of the CHVs are as follows:

<i>Female CHV</i>	<i>Male CHV</i>
Maternal and child health	Involve community in its own health care
Female family planning	Male family planning
Immunization	Arrange for regular supplies of medicines, chemicals, etc.
Family records	Safety of drinking water
	Insecticide spraying
	<i>Sanitation</i>
	(a) Cleaning of surroundings
	(b) Soakage pits
	(c) Latrines
	(d) Filling of stagnant pools, etc.
	Start kitchen gardens
	School and adult health education
	Treatment of common ailments
	Suspect, confirm, and treat tuberculosis, leprosy and malaria
	Define children needing nutritional help to community
	Nutritional advice and supplements
	Such other functions as may be allotted to him/her by the community

Wherever possible these workers will involve the community itself, in carrying out these functions.

7.08 The fear that this scheme will create an army of mini-doctors and quacks has been raised by the medical profession. In fact, they are less likely to use dangerous drugs and techniques, as both they as well as the community know of their

ORGANISATIONAL CHART FOR THE PROPOSED HEALTH SERVICES

Population covered	Controlling authority	Number of units required by AD 2000		Cost per person of population covered at the level indicated (Rs.)	Approximate proportion of the total services	Functions
CENTRAL, STATE & REGIONAL ORGANISATIONS						
	Regional health services controlled by State or Central govt.		STATE AND CENTRAL HEALTH ADMINISTRATION	1		
			SPECIAL INSTITUTES FOR SERVICE, TRAINING AND RESEARCH	1		To impart specialised training in public health and clinical specialities e.g. at the AIHH & PH, AIIMS and others.
			TRAINING INSTITUTIONS	2		To train medical, nursing and paramedical personnel.
HEALTH SERVICE DELIVERY ORGANISATION LEVELS & STAFFING PER UNIT						
50 lakh persons per unit	Regional health services controlled by State or Central govt.	180	SPECIALIST CENTRE Speciality and superspeciality departments of both curative medicine (e.g. neurology and thoracic surgery) and of preventive and social medicine	3.5	2%	To monitor preventive health activities with emphasis on epidemiology and for curative services requiring highly specialised care e.g. superspecialities.
10 lakh persons per unit	Zilla Parishad/ District	900	DISTRICT HEALTH CENTRE Senior specialist i/c trained in preventive & social medicine & administration 8 to 12 specialists but no speciality departments (Centre for Public Health and hospital of 200 beds plus a dharamshala)	3.5		To monitor all preventive and curative health services of 10 lakh population and to provide for treating cases beyond the capacity of the Community Health Centre.
1 lakh persons per unit	Panchayat Samiti/Block	9,000	COMMUNITY HEALTH CENTRE 1 Surgeon or physician i/c (with special training in preventive and social medicine and health administration) 1 Surgeon 1 Physician 6 Medical officers 4 Nursing officers 8 Auxiliary nurses 1 Senior health assistant (Male) 1 Senior health assistant (Female) (30 beds plus a Dharamshala with O.T., Pathology, X-ray, Out-patients and ambulance) 1 Rehabilitation therapist 2 Health laboratory technicians 1 X-ray technician 1 Statistical assistant 13 Medical/Health assistants 15 Administrative & maintenance staff	6	8%	To monitor, guide, supervise and coordinate all preventive, promotive and curative health activities of the Panchayat Samiti/Block. Also to undertake almost all medical, surgical and other curative activity which cannot be tackled at the sub-centre level. To function as a full-fledged hospital capable of tackling all but the few most major problems which will be referred to the District Health Centre.
5000 persons per unit	Gram Panchayat	1,80,000	SUB-CENTRE 2 Multipurpose Workers 2 Medical attendants (5 beds) 1 Male and 1 Female Health Assistant for every fourth Sub-Centre	7		To provide guidance, training and support for both curative and preventive activities of the CHWs of the area such as immunisation, collection of data, sanitation and health education. To deal with most of the common medical and surgical problems including intravenous rehydration, deliveries, minor injuries and to provide facilities for family planning and cataract operations.
1000 persons per unit	Gram Panchayat	9 lakh	VILLAGE/NEIGHBOURHOOD SERVICE 1 Male and 1 Female Community Health Worker (Preventive, Promotive and simple Curative facilities)	6	90%	The community aided by the Community Health Workers, will itself undertake simple curative and preventive services like environmental sanitation, safe drinking water, insecticide spraying, immunisation, nutritional advice and supplements, maternal and child health & family planning services, treatment of common ailments, diagnose and after confirmation treat TB, leprosy and malaria.
			Total Cost Per Capita Per Annum	30	100%	

limited training and abilities. The best insurance against abuse is a community which is well informed about its health and the functions of its health workers including the extent of service that can be safely expected of them. Such a community will not only take active interest but also extend the cooperation and support without which no health functionary can hope to succeed. Such a community will also demand the services due to them and be the best supervisory mechanism over all the health workers in their area. The raising of community awareness is therefore, the best and possibly the only method for ensuring supervision and prevention of misuse of the health services.

7.09 Despite the production of 120,401 nurses and 55,656 auxiliary nurse midwives (ANM), over 80 per cent of all deliveries in the rural areas continue to be undertaken by the traditional *dais* often under conditions which would deter most professional workers. The ANM, despite her superior training and high emoluments, has failed to replace the *dai* as she has not been trained to undertake normal deliveries under such adverse conditions nor has she facilities at the existing sub-centre to utilise her training for the more difficult ones. She is therefore, neither culturally nor professionally suited for her job and represents the dilemma of most of the cadres we have evolved for our existing health services. No attempt can or should be made to replace or bypass the *dai*. Instead, the aim should be to increase her prestige and make her more effective and useful by training her in simple and practical aseptic techniques, providing simple kits, and encouraging her to carry out some of the functions of maternal and child care. The CHV who lives in the same village can establish ready rapport with the *dai* and utilize her help in many of her activities. In fact, some of the *dais* could be capable of becoming good CHVs.

Training of Selected Individuals

7.10 In order to mobilise widespread support for health activities from all segments of the community, it is recommended

that one or more persons be trained from every ten or twenty households. Training will be given in simple health practices so that they may not only be able to look after some of the simple problems such as sanitation, but also coordinate with and support the Community Health Volunteers of that area.

Village Health Committee

7.11 It should be an advantage if all such voluntary health personnel at the household level form a local village health committee and regularly meet the Community Health Volunteers, the MPWs and the Health Assistant to ensure people's participation in all health programmes.

Referral Service

7.12 While the bulk of both preventive and curative health functions will be carried out at the CHV level, certain functions in the preventive as well as curative field will have to be undertaken by better trained, full-time health functionaries with additional facilities. These functions will be undertaken at various levels such as the Gram Panchayat, Panchayat Samiti and the Zilla Parishad, the lowest levels undertaking the simplest of these functions, which are fortunately also the commonest. Only the very few more difficult problems will need to be referred to the apex centres. A mechanism of grading and filtering of the referral services has therefore, to be devised.

7.13 The simpler referral services within the community will be undertaken at the sub-centres at approximately 5,000 population level, while the majority of the more difficult curative problems will be dealt with at the Community Health Centre at the 100,000 level. The sub-centre and the Community Health Centre should be sited at a convenient and easily accessible location for access to the services.

Assistance

7.14 While the community with the help of its own voluntary

part-time health volunteers will be able to undertake many health functions when suitably activated, they will have the confidence to do so only if they have the necessary technical guidance and support, both for preventive and curative functions that require greater skills and facilities. Their help in the preventive and promotive field will be mainly as under:

- (a) To support the Community Health Volunteers by
 - i. Continuous training and help in all their activities including care of common illnesses as also diseases like tuberculosis, leprosy and malaria.
 - ii. Ensuring uninterrupted supplies of medicines, pesticides, bleaching powder and other health materials.
 - iii. Ensuring meaningful recording and use of family and community health data.
 - iv. Providing educational materials including health education.
- (b) To involve the community in their health activities by
 - i. Meeting the leaders and elected bodies.
 - ii. Organising public meetings.
 - iii. Involvement of schools.
 - iv. Explaining the functions of all health workers of the area and establishing rapport with them.
 - v. Solving problems that arise between the community and its health workers.
 - vi. Reporting to the community the health activities being undertaken in its area and to solicit its support.
 - vii. Requesting the community to take disciplinary action against those who fail in their duties.
- (c) To monitor the health of the community and take suitable action by
 - i. Collating and analysing data collected by the health volunteers.

- ii. Taking suitable action to ensure adequate coverage—immunization, tuberculosis, leprosy, malaria, etc.
 - iii. Detect and take action during epidemics.
 - iv. Transmit statistical data to the District Health Officer, and to all local bodies, e.g. Gram Panchayat, Panchayat Samiti and Zilla Parishad.
- (d) To undertake health education in the community by
- i. Preparing of suitable material e.g. newsletters, wall posters, etc.
 - ii. School and adult education using various media of communication.
- (e) Purchase and distribution of medicines and supplies.

Curative services which are beyond the scope of the CHV will naturally require a referral service for the medical and surgical problems.

Health Services at the Sub-centre Level

7.15 The supportive services which the village/neighbourhood centre needs should be as near the people as possible to ensure ready availability and full utilization. Fortunately, even in the referral system, the majority of the common problems are of a relatively simple nature, e.g. intravenous rehydration, uncomplicated deliveries, minor injuries, family planning procedures like insertion of IUD, tubectomy and vasectomy. It is, therefore recommended that, at every 5,000 population level, there should be a sub-centre with five beds and a small operating and maternity room where a Multipurpose Worker trained in these specific tasks will be able to provide the first level preventive as well as curative referral services to the concerned village or urban community. The sub-centre will receive regular visits from the staff of the Community Health Centre (CHC) for consultative help and for conducting operative procedures like

family planning operations and cataracts on a regular basis. This will not only be convenient for the patients but will also relieve a large load on the more expensive Community Health Centre beds. The more difficult problems will be transferred to the Community Health Centre, the sub-centre acting as a useful triage and holding station during this process.

7.16 The staff of the sub-centre will also be responsible for the majority of the preventive and promotive functions detailed above in cooperation with the CHVs and *dais* of the area, under the supervision of the Community Health Centre. The Community Health Volunteers with the support of the sub-centre, will form the most integral part of the community's health system. It should be clarified that such a sub-centre will not replace the existing Primary Health Centre. The difference will be as follows:

- (1) Its functions will be specific and limited.
- (2) It will be an integral part of the community and solely under its control.
- (3) It will not have a resident doctor as the problems and available facilities do not need and will not be able to utilize the services of a full-time doctor.
- (4) It will nevertheless have, not only regular consultative help of a doctor from the Community Health Centre, but also a fully staffed and equipped hospital and a senior public health officer and his staff at its command. In actual fact, it will become the peripheral limb of the Community Health Centre.

7.17 The Multipurpose Workers (MPWs) who will be the key personnel at the 5,000 level will, like the Community Health Volunteers, be a part of the community. They will, wherever possible, be residents of the community, and wherever possible may also be promoted from the Community Health Volunteers cadre. Only thus will they be sensitive and responsive to the community, having experienced the problems of health at the most remote level as Community Health Volunteers. High

school education will be adequate qualification; and one year's training at the local Community Health Centre after two years' practical experience as a Community Health Volunteer should be adequate, provided the training is highly practical and specific for the requirements of the job. Their accountability to the community will not only remain because they are members of the same community, but also because they will be sponsored and appointed by the community who will pay their salary. Like all posts within the community, they will not be transferable; but their services can be terminated for disciplinary reasons.

7.18 There will be one male and one female MPW for each sub-centre to cater for all its preventive, promotive and curative functions.

7.19 There will also be one male and one female HA for every fourth sub-centre supervising the MPWs.

The Community Health Centre (CHC)

7.20 For approximately every 20 sub-centres, i.e. 100,000 population, there will be a CHC which will not only be the referral centre for the sub-centres but also the supporting and coordinating agency for all health activity in the Panchayat Samiti Block. The 100,000 population level is suggested as the average size for the CHC as this will (1) retain proximity and intimate links with the community so essential for any community activity, (2) be of adequate size to be able to afford the services of well-qualified personnel in both the preventive and curative fields, and (3) provide the facilities of a well-equipped centre which can deal with the vast majority of all referral problems. The district level which is the present center of community health activity has proved to be too remote and impersonal and is unable to provide a sense of participation for the people who utilize these services. This also results in a technical and bureaucratic, rather than a human approach so essential for an

intensely human activity. The one lakh population also coincides with the 'block' development concept and can be controlled by the block level people's committee or the Panchayat Samiti.

7.21 Since the CHC will be the nerve centre of all health activity of the area, it must be situated at the site where it is most accessible to all the people and not only in a large village or town. Where a CHC happens to be established at a convenient location, it should be converted into a Community Health Centre. In fact it should preferably be away from large population aggregations to prevent its misuse as a direct or primary referral centre by-passing the CHV or sub-centre, a problem which has hampered the efficiency of all our referral centres whether they be district hospitals or medical college hospitals with their superspecialities. For this purpose, it is essential that a sub-centre be closely associated with the CHC to deal with the primary referral problems of the 5,000 population in its immediate vicinity, so that the facilities of the CHC are utilized for the purpose for which they are meant. Attempts at direct approach to the CHC should be firmly resisted.

7.22 The function of the CHC as the nerve centre of the community health programme entails both preventive and curative activity. It is therefore necessary that the preventive and curative services be integrated at this level and that the senior-most medical officer in charge of the CHC should have adequate formal training in preventive, social and managerial aspects of health care. All other medical and nursing staff should also be oriented in preventive and promotive aspects of health. Care should be taken that the preventive and promotive part of the service is given over-riding emphasis. Without constant vigilance there is an invariable tendency and pressure from both the community and the professionals, for the more dramatic and high-cost curative service to gain preponderance.

Preventive Services

7.23 The medical officer in charge of the CHC who is either

qualified or has received special training in preventive and social (community) medicine and trained in epidemiology will, with the help of his staff, attend to the problems of preventive and social medicine enumerated earlier and see that this important aspect of the CHC function is given its due attention.

7.24 The aim should be to stimulate the community and its workers, especially at the village and sub-centre level, i.e. CHVs, MPWs and Health Assistants, to undertake the vast majority of the activities in an intelligent and coordinated manner. The error of the present Primary Health Centres working in splendid isolation from the community should not be repeated, because no results can be achieved in the long run by trying to appropriate community functions. Community action is undoubtedly a slow and laborious process of activation but there is no alternative. The 'camp' and 'target' approach advocated by the present professional workers is highly disruptive of any continuous meaningful activity. It should be replaced by continuous and sustained activity which, though less dramatic, is by far the most effective. Family planning, cataract and similar operations can be organised as continuous activities at the sub-centre level, where the surgeons can come at predetermined intervals. Studies reveal that the CHVs, after a few years, experience and with encouragement and guidance, can undertake immunization in their own community, diagnose fairly accurately cases of leprosy and tuberculosis, and once confirmed at the sub-centre or CHC, treat them with the necessary drugs like DDS, Isoniazid and even give injections of Streptomycin. Wherever this has been practised, there has been a remarkable increase in early detection and regularity of treatment of these diseases as compared to the present fully professionalized approach. The function of the preventive and promotive services of the CHC is to stimulate and monitor all activity in these fields.

Community Health Centre Hospital

7.25 Every CHC will have a hospital with about 30 beds and an equal or larger number of *Dharamshala* beds (where the

patients can stay with their relatives after the acute stage of hospitalization). This hospital will be situated in an accessible part of the community. It should also be easily accessible to the District Health Centre. The capital cost of construction, including staff quarters and equipment will be approximately Rs. 1.5 to 2.5 million depending on its size and the recurring cost will be approximately Rs. 5 per capita of the population per annum. The facilities will consist of an out-patient department, a well-equipped operation theatre, pathology laboratory and an X-ray department with two medium sized X-ray units, one as a standby. It will be able to perform most surgical operations and the laboratory and X-ray will be adequate for most routine medical and surgical diagnostic purposes. For the few conditions requiring greater facilities, either the patients will be transferred to the District Health Centre or sent there for the necessary investigations. Specialists from the district hospitals will regularly visit these community hospitals to consult on difficult cases which may be either operated by them at this hospital or transferred to the district hospital. The follow-up of these cases will be undertaken at the CHC thus avoiding patient transport. The local doctor will not feel isolated from his specialist colleagues and will keep in touch with the latest knowledge which, whenever possible, he will himself utilize at his own hospital.

7.26 A good library will help the staff to keep abreast with latest medical knowledge. Maintenance technicians will look after routine servicing and maintenance of the equipment and transport.

7.27 The staffing pattern of the Community Health Centre is indicated as follows:

MEDICAL STAFF	:	1 Medical Officer i.e. trained in public health 1 Physician 4 General Duty Medical Officers
NURSING STAFF	:	1 Matron-cum-Sister Tutor 3 Staff Nurses 8 Auxiliary Nurses - Senior MPWs
SUPERVISORY FIELD STAFF	:	1 Senior Health Assistant (Male) 1 Senior Health Assistant (Female)

ASSISTANTS	: 13 Male or Female attendants (ward, O.T., Lab., OPD, Sweeper, etc.)
TECHNICIANS	: 2 Health Laboratory Technicians 1 X-ray 1 Pharmacist
ADMINISTRATIVE &	1 Accounts Clerk
MAINTENANCE STAFF :	1 Clerk—General duty 1 Storekeeper 2 Maintenance Technicians (1 civil/mechanical and electrical) 3 Watchmen-cum-Gardeners 1 Dhobi 1 Driver 2 Peons

All staff except the medical officers and nursing sister will be trained and promoted from among the MPWs of their own sub-centres. There will therefore be ample promotional opportunity for all health personnel.

Administrative and Financial Control

7.28 In the present system the community has minimum contact with the health staff meant to serve them. Even if they are interested in organising and improving their own health service they have neither the administrative nor financial control necessary to do so. The health service and also the Zilla Parishad are too remote for them to exert any effective control.

7.29 The 100,000 population unit suggested in the new organisational plan is the size which will ensure adequate rapport between the health staff and the people. Yet this will be of little value unless the entire administrative and financial control of all health activities for the area is vested in the hands of the community itself. Even at the sub-centre level, the administrative and financial control must be vested with the Gram Panchayats. Only then will local workers owe allegiance and responsibility to the community to which they belong. The moribund Health

Committees already existing in each Panchayat must be activated and given wider representation from all segments of the local population.

7.30 The Panchayat Samiti, or Development Block through its Health Committee, which will consist of representatives from the Health Committee of each Gram Panchayat, will be the overall coordinator for health activities of the area and responsible for the efficient functioning of their Community Health Centre. This Committee will coopt members from the medical, nursing and paramedical staff working in their area as well as a representative each from the District Health Centre and will be solely responsible for administrative and financial control of all health personnel and activities in their area including the community hospital.

7.31 All funds allocated for the health activities of the area will be routed through the Panchayat Samiti or Block who will in turn disburse the amounts earmarked for each Gram Panchayat. Adequate funds must be assured for maintaining the basic services for the health of the people whether they are from central allotment or raised by the local community. Once these minimal needs are assured it should be up to the local community for raising additional funds for service over and above the stipulated minimum.

7.32 It is important that the allocated budget should reach the most peripheral body that controls the health activity, e.g. the Gram Panchayat for the village and sub-centres, the Panchayat Samiti for the Community Health Centre and the Zilla Parishad for the District Health Centre. It is for these bodies to disburse the salaries of the staff under their control and purchase the drugs and supplies required for their use. Such disbursement of funds will give responsibility to the local body for their own welfare, provide them the control over their staff and ensure the most direct and speedy purchase of material and supplies, if necessary directly from the market, and avoid the interminable delays which preclude any meaningful activity by the workers in the present bureaucratized system. The local bodies may arrange between themselves for common purchases if found more suitable.

7.33 It is sometimes argued that such delegation of administrative and financial responsibility to the local community may lead to its misuse. We feel that some misuse of power, especially in the early stages, may perhaps be inevitable. But we also feel that the experience of the past three decades reveals sufficient evidence of misuse of power even when centralized, with the result that, despite vast expenditure on health, little benefits have accrued to the people. Decentralization will permit at least some, if not all the major benefits of health expenditure to percolate to the people. Abuse of funds at the local level will be more evident to the people if they are well informed of the allocation and its purpose. In the existing system no one at the village or even at the Block level is aware of the allocation of the budget for health intended for their welfare.

7.34 It is essential that simultaneous with the allocation of health funds to the Panchayat or Block Samiti and through them to the Gram Panchayats, they should be earmarked for specific activities and the knowledge of the availability of such funds and their purpose should be widely disseminated among all the beneficiaries using all media of communication, both local (such as wall posters or public announcements) and mass media such as newspapers, radio and television which are not within the control of the local power structure. This would arouse the awareness of the people in the programmes for their health, and help popular surveillance and counteraction to see that the funds are used for the allocated purpose and not misused or misappropriated.

7.35 Those communities which show a greater sense of awareness and social responsibility, should receive greater benefit.

7.36 The buildings should always be in local style using local materials and local workers. This will ensure not only reduction in cost and facility of repairs and maintenance, but will actually be more acceptable to the people.

Supervision

7.37 The only practical method to achieve good and effective

supervision is to encourage the community to undertake or participate in the supervisory functions. They are best suited to overcome political problems and are in the closest contact with their health workers. Since inefficiency or neglect would affect their own welfare they would have the greatest stake in the efficiency of the service. Unfortunately the present health service has made little effort to involve the community which is generally unaware even of the health staff and facilities placed within its own territory. This is a convenient device to avoid community surveillance and inevitable questioning of the deficiencies of the service. Similarly the budget and expenditure is maintained as an internal matter within the service. The problems of supervision and the need for the same would be minimized if the workers belong to and are responsible to their own community. Social ostracism is generally a better weapon than punitive action.

Promotion and Transfer

7.38 Constant transfer is the bane of our existing services. It lends itself to favouritism, misuse of authority, demoralization of efficient workers and does not permit the carrying out of any continuous activity or building of rapport with the people. Punishment of a wayward worker today is almost entirely restricted to transfer. In the bargain, he is imposed on a less fortunate community which gets punished for no fault of its own. In the system we propose, final disciplinary action would mean discharge of the worker from the service. All workers will belong to their own community and cannot be transferred to any other. Unless this is insisted upon no effective service can ever be organised.

7.39 Except the medical and senior nursing staff all personnel in the proposed community health organisation will be recruited, trained and promoted from and within this community. The CHVs can, after a year's training at the Health Centre, become the full-time MPWs at the sub-centre level and after a further experience of about two years in this post, be eligible for a further year's training and promotion to the post of senior MPW or Health Assistant at the CHC. A channel for admission

to the nursing school or medical colleges should be opened for those who have risen to this level within the community health ladder. Even though they may not have had the formal educational level at present required for entrance to the medical college or a nursing school, these persons will be far more suitable as they will have had experience at all levels in dealing with the problems of the health of the people under the prevailing conditions. This system of promotion will also result in selection at the community level and the workers who are most capable and who have shown the most sympathy for their people will generally be selected by the Health Committee. These candidates will be more mature and come with a background of practical health experience. They will then return to their Community Health Centre and continue to serve those who have sent them for training. A few of these, after a further three years, can be selected for higher specialization, once again returning to their community as their surgeon, physician or sister tutor.

Scales of Salary

7.40 While the existing scales of salary may be utilized for most workers, it is felt that the CHV who is expected to perform a large number of health functions should receive a higher remuneration starting at Rs. 100 per month with annual increments. Too high a remuneration may result in undue pressures in securing these posts which we repeat is more a social than a professional function. It is also felt that the difference in salaries between the various categories of workers is at present excessive and does not in any way reflect their relative value to the community. We should try to reduce this as far as possible.

The District Health Centre (DHC)

7.41 This will be the centre for monitoring of all preventive,

promotive and curative health services of one million population, i.e. 10 Community Health Centres. This will mean one centre in a small district or two or more for large districts. It will also provide curative services for those few cases and problems which cannot be tackled at the Community Health Centre level. The person in charge of the District Health Centre will be the seniormost medical officer of the area, preferably one who will have been trained primarily in preventive and social medicine. But if not, he will undertake specialist training for at least one year in one of the public health institutes. He should be supported by adequate professional, supervisory and administrative staff.

7.42 The District Health Centre will be a secondary referral centre only for such problems which cannot be tackled at the Community Health Centres. Since with the availability for referral services, there will be an increased demand from the public, it is envisaged that, by the end of the century, a 200-bed district hospital with an attached *dharamshala* will be required for every 10 community hospitals covering a total of a million population. Such a hospital must be situated central to the community hospitals it drains and not in a town at its periphery. In fact, it will be an advantage to locate such a hospital away from a town to avoid its misuse by cases which should be looked after by the community in the community hospital of the town. In addition, a Community Health Centre should be adjacent to, if not incorporated into, the District Health Centre, to look after all the routine referral problems of the area, draining the adjacent population so that the DHC is not made use of as a Community Health Centre for the local area.

7.43 The district hospital (which is the ideal medical college hospital) will have the following major specialities: general surgery, general medicine, obstetrics, gynaecology, paediatrics, anaesthesia, pathology, radiology, ophthalmology, dermatology, orthopaedic surgery. Specialists will perform the following duties: (1) Visit community hospitals at regular intervals and give specialist advice and support to the staff of these hospitals, treat and operate on the simpler problems of their speciality at the Community Health Centre and help train the local staff; major cases will be referred to the district hospital whose

follow-up will be again at the community hospital for the convenience of the patient; (2) Treat the major cases at the district hospital; and (3) Help in the training of medical students of the attached medical school. While there will be specialists, there will be no speciality units at these hospitals. These will be at the specialist hospitals which will cater only to the most difficult cases referred by the district hospital.

7.44 Every fifth District Health Centre will have an attached medical college, and every District Health Centre a nursing and health school, to train the male and female health assistants, technicians and other personnel required for all the referral services for their population. The ANMs and male multipurpose workers will be trained in their respective CHCs by the staff provided for these purposes.

7.45 The district hospital will be provided with the staff and facilities required for the above activities as well as for preventive work, health information system and epidemiological surveillance.

The Specialist Centre

7.46 The Specialist Centres will serve a population of five million. They will comprise specialist and superspecialist departments of curative, preventive and social medicine.

7.47 The specialist hospital will tackle the few difficult problems which cannot be handled at the District Health Centre level. No direct references will be entertained. These hospitals will not be part of the general hospital and will consist of about 20 independent speciality units of 20 to 30 beds each with a few common services and *dharamshalas* for long-stay cases and their relatives. They can be situated in towns and cities to avail of adequate water supply, electricity and other facilities. Financial as well as administrative authority should be provided to each of these highly specialized units in order to be able to meet their special needs which only they can define. Several such hospitals

with small highly specialized units spread over the population (eventually one for every five million) will be far preferable to the few large hospitals which tend to cluster only in the major cities at present. Adequate capital and recurring input must be provided for specialized units to enable them to deal effectively with the most difficult problems.

7.48 These units will also be centres for training of specialists for the District hospitals. Hence they will utilize the District Health Centres for the purpose of postgraduate training and simultaneously provide consultative service to them. Another role of these centres will be to undertake research in the problems of their speciality, to distil this knowledge, and develop simplified procedure and disseminate them for use at district and community hospitals.

7.49 The centres of preventive and social medicine at this level will be the sub-units of the Epidemiology Bureau functioning at the State level. Their functions will be (1) to provide training in preventive and social medicine, (2) to monitor all preventive services for 5 million population, and (3) research. The research activity of the centre will be determined by the problems referred to it by the epidemiology units of the District Health Centre. More complicated long-term research will be the function of the State-level units. The functions of health care delivery, training and research will be fully integrated throughout the services.

Other Specialized Institutions and Administration

7.50 So far, we have described the organisation of the alternative model of health services on the principle of regionalization advocated by the Bhore Committee and suggested the responsibilities, functions and functionaries to be provided at five levels, viz. (1) Population of 1,000; (2) Population of 5,000; (3) Population of 100,000; (4) Population of 1,000,000; and (5) Population of 5,000,000. The health care services will require, in addition to this, some special Institutes for Training and

Research and administrative machineries at State and Central levels.

Rehabilitation Services

7.51 The physically handicapped form the largest single category of persons needing rehabilitation. It is estimated that there are about 60 million physically handicapped in the country and that 5 million are being added to them every year. Altogether, there are only about 20 centres for comprehensive rehabilitation service and training in the country to meet the needs of this vast population. Although the numbers of the physically handicapped are much larger in rural areas, there is only one rural rehabilitation centre, viz. the National Institute of Prosthetics and Orthotics Training near Bhubaneswar. Only about 25 per cent of all patients who come to urban centres are from the surrounding rural area. Furthermore, most urban patients come from the upper classes.

7.52 We propose two major changes in the existing situation. The first is that we cannot solve these rehabilitation problems by borrowing technologies developed in the West; they are inappropriate and costly. What is needed is an innovative effort to develop new indigenous technologies which are suitable to our conditions and within the reach of the people. The excellent work of Dr. P.K. Sethi in designing what has come to be known as "Jaipur foot" is a good illustration of what we have in mind. It highlights the advantages of involving local artisans and local traditions.*

7.53 Our second proposal is that this huge problem cannot be solved by proliferating rehabilitation experts or increasing the number of specialist centres. Like other components of health, rehabilitation services have also to be integrated with community

* An interesting case study of this work has been published by the Indian Institute of Education, 128/2 Karve Road, Kothrud, Pune - 411 029.

health services. Upto and at the district levels there should not be any separate rehabilitation facilities nor a rehabilitation officer. The services for occupational therapy, physiotherapy and others will be included as part of general health services. However, specialist centres for rehabilitation medicine will be developed at State and Central levels in keeping with other such specialist centres envisaged in this report. At the CHC level, there will be employed a Multipurpose Rehabilitation Therapist, who will be from the community. He will be trained for six months or one year (after high school) at the district hospital. He will be a full-time worker who will be trained in early detection and prevention of disabilities, basic community education and rehabilitation treatment. The rehabilitation therapist will work in close cooperation with the sub-centres. Education and training in basic skills necessary for rehabilitation work will be part of the training of CHVs and MPWs.

Urban Health Services

7.54 Will this model apply to urban areas? We are definitely of the view that it should. It will improve the quality of health services in urban areas, especially for the poor and underprivileged groups.

7.55 It is often felt that, with the concentration of almost 80 per cent of our health manpower and most resources like medical colleges and hospitals in urban areas, the problem of health care in them is almost solved. This is not so. While there may be easier access to the doctor and the referral services, this does not necessarily mean better health care. While help may be more easily available for major illnesses, there is also the danger of excessive medicalisation even for minor ailments resulting in an increasingly expensive and dangerous form of health care. The middle class families which depend on the private practitioner are finding their medical expenses unbearable, being only next to food and housing. On the other hand, the impersonal 'free' hospital leaves much to be desired in human as well as technical

services. The city and town dweller is therefore not much better off than his rural counterpart, despite considerable private and public expenditure. Unfortunately it is generally accepted that there is no alternative.

7.56 The alternative model of health care advocated here is equally applicable to the urban as well as to rural areas. The CHV, MPW, and the Community Health Centre would provide a more effective umbrella for their health care than the existing services. While the problems of transport and communications may be less, other problems such as the presence of a high density of private practitioners and large impressive specialised hospitals may pose problems in the acceptance of such a concept in its earlier stages. We feel certain that the people cannot eventually fail to realise the increased acceptability and effectiveness of such services. The preventive and promotive aspects of health care in such a system would be far superior to the almost exclusively curative-oriented services that exist today.

The Camp Approach

7.57 In the absence of a well-developed regular service, the 'camp approach' has been popularised to deal with problems as they arise. It is an approach which prevents the development of any organised health care on a regular basis by diverting staff and supplies from one region to another and cannot be too strongly condemned. All activities including family planning operations, surgery for cataract or other conditions must be undertaken as a routine function of the sub-centre and the community hospital. Immunization must be undertaken routinely as a community health programme by its CHV. Only rare instances like a severe localized epidemic may justify withdrawal of staff from their normal duties. The camp approach much favoured by the health bureaucracy, social service organisations and the medical profession, needs to be curbed because, even though dramatic, it is highly disruptive in the evolution of a well-organised health care system. The only exception we would

make is mobile eye care services to mop up the backlog of curable blindness. These may be developed as an interim measure as the alternative model gets established.

Flexibility

7.58 While the basic system outlined above may be useful in most parts of the country, it is inevitable that in a large subcontinent like ours there will have to be modifications to meet the varying needs of different regions. In inaccessible mountainous regions the units may cover a smaller population while in congested urban situations it could serve a larger number of people. There should be no hesitation to modify this model, where necessary, to suit local conditions. A homogenous community with a strong base of cooperative effort could well undertake its own health care by developing its own health and social insurance schemes. Even here, the concept of community involvement and graded services would help to secure optimal returns for their investment.

IV

The Alternative Model of Health Care Services : Some Specific Aspects

8

Health Services for Women and Children

8.01 In this part of the Report, we shall deal with some special aspects of the alternative model of the health care services. The present Chapter will deal with health services for women and children. The four succeeding chapters will deal respectively with communicable diseases, training and manpower, drugs and pharmaceuticals, and research.

Health Services for Women and Children

A Review of the Past

8.02 Health services for women and children are of great significance. Children below five and women in the reproductive age (15-45) comprise about 37 per cent of the total population and constitute the largest vulnerable group in society. On the one hand, these services are closely linked with family planning services which depend on the reduction in the infant mortality rate. On the other, the efficiency of the health services for women and children is also closely related to the status of women in society. Programmes directed towards improving the status of women are crucial to national development.

8.03 During the last 30 years, the health status of children has

not shown any material change. It is true that infant mortality rate fell from about 160 to about 120. But, as was pointed out in Chapter I, this is still too high. Further, it was shown in Chapter III that there has also been no appreciable improvement in the nutritional status of our children, nor has the educational status of children improved materially. Even as of now, about 20 per cent of the children (age group 6-14) do not go to schools at all; and of those that do, most drop out prematurely and only about 25 per cent complete the elementary school. Our society still gives a raw deal to its children, and especially to the children of the poor and underprivileged.

8.04 The efforts to improve the health status of women have fared even worse. Perhaps a very sensitive and revealing index of the health status of women is the sex-ratio (number of females for every 1,000 males in the total population). This is generally 1,000 or even more as women are biologically stronger. In India, however, this has been very adverse to women; and what is worse, it is continuously becoming more so. It stood at 972 in 1901, fell to 946 in 1951 and further to 930 in 1971. This has happened, it must be noted, in spite of the fact that the enumeration of women and their ages has improved with every Census. The main reason for this decline is that, for almost all ages below 50, mortality among females is greater than that among males; and this is specially true of women in the reproductive age (15-45). The reasons are not far to seek. The public health services have reflected social attitudes in regarding all women primarily as mothers or potential mothers. Health services for women have therefore, been termed as maternal and child health (MCH) services. This has resulted in a de-emphasis of general health services for them. As pointed out in Chapter III, the nutritional status of women is low. This makes them more vulnerable to disease. But the records of the health care system, whether public or private, show that health services are availed of much less by women than by men. The provision of facilities for women in the public health system (as measured by women doctors, beds reserved for women, etc.) is also significantly less than that for men. This is also supported by household surveys which show that, at any given time, more

women than men are ailing. But their illnesses tend to be neglected: they generally receive free, traditional treatment of doubtful efficacy or none at all. On the whole, therefore, there is positive evidence to conclude that the health status of women has declined over the last 30 years.

8.05 The MCH services in the country were late to start. They have also developed more slowly, even in the post-independence period. Not infrequently, they have been crowded out by the pressures of the family planning programme. Even today, they are patchy and rudimentary and have not been able to touch even the fringe of the problem. We therefore recommend, with all the emphasis at our command, that the MCH services should be adequately developed, on the basis of the highest priority, over the next 20 years. We should aim, as indicated in Chapter II, to reduce the infant mortality rate to 60 or less (which is what Kerala has already been able to achieve) and to set the adverse sex-ratio moving upwards very substantially. By A.D. 2000 it should reach at least the level it had in 1901 (972).

A Programme of Action

8.06 Health services for women and children can be improved only in association with a substantial change in their social status. This implies first and foremost, a change in the present attitude of looking upon women and children as expendable. A vicious circle seems to have set in. The high mortality rates of children and the social preference for sons rather than daughters leads to a demand for more children. To the women this means the burden of repeated childbirths which lowers their vitality and further depresses their health status. This physical inability of women to participate as equals in society, perpetuates the preconditions for their oppression and low social status. This is precisely what a declining sex-ratio indicates; and this is exactly the situation and attitude which society must outgrow.

8.07 Some of the measures to improve the status of women and

children are given below. Of course, most measures meant to improve the status of women will automatically imply a corresponding improvement in the status of children as well.

- (1) Creation of adequate opportunities for gainful employment with resort to reservations and emphasis on equity in remuneration;
- (2) Developing a programme of community creches and *balwadis*, partly to help women seek gainful employment and partly to free older children for attending school (such creches and *balwadis* would facilitate pre-school nutrition and immunization and also provide considerable employment to women);
- (3) Raising the age of marriage to 18 for girls and 21 for boys;
- (4) Spread of education among women, with special emphasis on non-formal adult education; and
- (5) Introduction of universal elementary education for all children in the age group 6-14.

Maternal and Child Health (MCH) Services in the Alternative Model

8.08 MCH services are, after all, a part of the health care system; and if the health services themselves fail at the periphery, it is idle to expect MCH services to reach the under-privileged groups. The first step needed therefore, is to take the general health services to the people. It is from this point of view that we recommended the alternative model of the community-based health services. It therefore follows, that MCH services also should be community-based as an integral part of this model. It will then be possible to introduce several essential innovations among which the following may be mentioned.

8.09 The community-based approach will determine MCH strategy. Over the years, the 'at-risk' and 'extensive-intensive areas' strategies have been suggested by various committees

studying the MCH problem in India. The latter strategy is discriminatory and should not be countenanced. The 'at-risk' approach is more meaningful since it involves identifying pregnant women who face high risks in pregnancy and delivery by being primiparas, grand-multiparas having abnormal presentations, anemia and poor general health. This community approach, however, should aim at *maximum total coverage* of all women and children, because their need for health services is indisputable. Within this, those who stand in need of special care (e.g. those 'at-risk') will of course receive it; but basic services such as routine antenatal care (ANC), delivery, postnatal care (PNC), infant care, immunization and treatment of ailments should be delivered to all women and children within the community.

8.10 The community approach means the use of skills and human resources which already exist in the community for specific problems. In the case of MCH, it will mean the training of traditional birth attendants, *dais*, and female Community Health Volunteers in early diagnosis and management through simple and safe procedures and utilizing them for MCH care. It must be stressed that, if only one Community Health Volunteer is to be placed in a village, then the Volunteer should be a woman rather than a man, since most of the important village level health activities will concern women and children. On the other hand, *dais*, who are in any case delivering the majority of babies, have the trust of the patient because they belong to the community and adhere to its cultural and social norms regarding childbirth. When these women are retrained and persuaded to abandon only specifically dangerous practices, they are a powerful force for ensuring that all deliveries are optimally safe and risk-free. Moreover, they can expand their present services which include only the neo-natal period to cover care and immunization of all pre-schoolers, health and family planning, education of mothers and young women, and many other as yet unimagined activities. The *dais* and Community Health Volunteers (female) working together, can be given excellent referral backing by the female MPWs at the sub-centre, level. The sub-centre could undertake difficult deliveries, intravenous rehydration, tubectomies and vasectomies,

and emergency treatment for all.

8.11 MCH services will be largely domiciliary in the community approach. It has often been noted that one of the main causes of low utilization of existing MCH services is that they require attendance at distant clinics or the Primary Health Centre for which the majority of women and particularly the poorest ones, cannot spare the time. A survey in rural Punjab, for instance, showed that only 10 per cent of Scheduled Caste women attended the antenatal care clinic as opposed to 55 per cent of non-Scheduled Caste women. On the other hand, when tetanus toxoid was given to pregnant women in their homes, coverage was 40 per cent of Scheduled Caste women and 48 per cent non-Scheduled Caste women. This applies to all MCH activities and services. Until such time as poorer women have more leisure, services must be made available to them in their homes, at times when they are available. The utilization of the *dai* and female Community Health Volunteers for MCH work should make domiciliary care an attainable goal. Furthermore, it should be possible to subdivide villages (and city wards) into 20-family units and train voluntary workers to look after these units. This would increase the penetration of services and intensify health awareness.

8.12 MCH services in the community should be organised along the following lines of activity and referral:

- (1) The village-level activities, carried out by *dai* and/or CHV should encompass ANC, deliveries, PNC, family planning and care of children.

Antenatal care (ANC) should concentrate on identification of high risk cases, regular home-visits and check-ups, treatment of nutritional deficiencies and tetanus toxoid immunization. Special emphasis should be given to nutrition in the last trimester of pregnancy.

Deliveries should be conducted with optimum safety and regard to asepsis. Lying-in cottages could be organised where they are culturally acceptable.

Postnatal care (PNC) should include immunization, control of

infection and nutritional care of mother and child. Family planning motivation and advice, nutrition and child care education and promotion of breast feeding are also important at this stage.

Responsibilities for pre-school care will include comprehensive immunization, control and timely treatment of infection, and nutrition supplement and surveillance, in that order.

School health need not be the specific responsibility of the MCH programme. Rather, school teachers should undergo CHV training and screen and treat the children under their care. Cases requiring further care should be referred by the teacher to the sub-centre or Multipurposes Worker.

- (2) The sub-centre level should be equipped and staffed to handle almost all of the MCH cases referred by *dais*/female CHVs. Among the important problems for which a facility should exist are: forceps deliveries, intravenous rehydration, IUCD insertions, terminal contraception, etc. done by MPW (female), supported by the doctor from the community hospital.

- (3) The community hospital should be the apex referral institution within the community for MCH problems. Surgical and medical facilities in gynaecology, obstetrics and paediatrics should be provided with a view to handling 9 per cent of the cases referred by the sub-centre. The need for adequate staff (medical and auxiliary) and equipment at this level cannot be overemphasized.

The district hospital level and above should handle only the more complex surgical and medical problems of women and children. Specialist and superspecialist services and beds may be provided at the appropriate level.

It can be seen from the above that the majority of MCH services will be delivered at the village level, with graded referral back-up from the high level units which will give the village-level workers confidence and technical as well as moral support.

This will also generate confidence and awareness among the people.

Priorities in MCH Activities

8.13 The prioritization of MCH activities is crucial in the Indian context of limited resources and the need to achieve results quickly. In our opinion, the following should be the order of priorities within MCH care:

- (1) Care of pregnant women—including treatment of specific nutritional disorders (anemia, etc.) beginning with the poorest sections;
- (2) Safe deliveries;
- (3) Postnatal care and care of the new-born, including prematures;
- (4) Nutritional care of children below 3 years, again beginning with the poorest children in the community;
- (5) Immunization of mothers and children—including tetanus toxoid, smallpox, BCG, DPT and polio;
- (6) Family planning advice and services, during pregnancy, following deliveries and co-ordination with child care; medical termination of pregnancy and menstrual regulation by trained personnel;
- (7) Treatment of illnesses including control of infection and oral rehydration.

8.14 As described earlier, inadequate and improper nutrition are at the root of most of the health problems of women and children. Thus nutritional surveillance should form the core of both ante and postnatal care. Immunization is next, in order to protect children from the fatal childhood diseases. Family planning advice will be much more acceptable if the first two priorities have achieved high coverage. Finally, the aim should be to

achieve cent per cent coverage of deliveries by trained *dais* and midwives.

Staff

8.15 Staffing of MCH services should be considerably improved. This is particularly necessary at the district level, since it is here that the leadership of an important programme like MCH must be located to monitor and evaluate the work in the area. The lack of such leadership has been the cause of past failures of MCH schemes.

Health Education

8.16 Health education of women and children must be conducted by workers at all levels of the community. They can enlist volunteers from the community to spread awareness and knowledge regarding nutrition, the physiology of pregnancy, infant and child health, family planning methods and complications, need for environmental hygiene, etc.

Family Planning

8.17 While motivating women for family planning and providing the needed services for it is an integral part of MCH services, care should be taken to see that the proportional balance is not lost and that MCH services retain their primary character of community-based services for women and children.

An Overview

8.18 It goes without saying that the reorganisation and invigoration of the general health services will have a manifold effect

on maternal and child health. The control of infection, safe water supply, sanitation, and other preventive services, and an efficient referral system for curative care, will relieve considerably the burden of ill-health which weighs down heavily upon women and children. The task of MCH services will thus become much lighter and easier to accomplish. The recommendations made in this Chapter should be interpreted against this background.

9

Control of Communicable Diseases

9.01 Communicable diseases were a major cause of morbidity in our country in the pre-modern period, because of the fact that their etiology was not known and there was no adequate technology for their treatment. As far back as 1887, it was estimated that four-fifths of all mortality in India was due to communicable diseases, the most virulent among which were malaria, tuberculosis, smallpox, cholera, diarrhoea, dysentery and plague. The control of communicable diseases, therefore, received early attention.

Progress Since Independence

9.02 It was, however, only after the attainment of independence that massive measures were adopted for the control of communicable diseases through the organisation of national programmes for all the major scourges. The results obtained have been far better than in the earlier days and it will be advantageous to begin this discussion with a review of the progress of these activities during the last 30 years.

Smallpox

9.03 The National Smallpox Eradication Programme has been a

phenomenal success and its total eradication has now been achieved. The more important factors contributing to this success are: introduction of a potent freeze-dried vaccine and the bifurcated needle for effective vaccination; change of strategy from mass vaccinations to active case-detection and rapid containment of outbreaks; constant review of eradication programme at the national and local level; flexibility in eradication strategy side-by-side with an effort to apply the most feasible strategy suited to the local conditions; and above all, close cooperation, teamwork, a sense of dedication and perseverance among all health workers at all levels. These may be useful in the future in working out strategies for eradication of other communicable diseases as well.

Plague

9.04 Human cases of plague have not been reported anywhere in the country since the early '60s and plague has ceased to be a major public health problem. However, the persistence of lurking foci as sylvatic plague in rodents in a few areas in South India calls for continued vigilance. There is also need for continued study of the epidemiology of the disease for understanding the cause for the persistence of these foci.

Cholera

9.05 India has been the endemic home for cholera and six of its seven pandemics are reported to have originated from this country. From this disease the morbidity and mortality have now been reduced considerably, particularly the latter.

Diarrhoeal Diseases

9.06 Diarrhoeal diseases, both acute and chronic are still a major health problem. They are bacterial, parasitic, nutritional or viral in origin—the result of several factors such as poor

environmental sanitation, unhygienic personal habits, unsatisfactory living conditions, low socio-economic status, malnutrition, ignorance and apathy. Among children, malnutrition and diarrhoea, as pointed out earlier, account for a substantial part of morbidity and mortality.

9.07 The long-term measures to eliminate these diseases are better nutrition, provision of safe drinking water, improvement of environmental sanitation and health education. These will have to be vigorously pursued. In the meanwhile, efforts to control the morbidity and mortality from the disease will become more effective if the people and the health functionaries at the local level—CHVs and MPWs—are trained to provide oral rehydration therapy with a simple glucose-salt mixture.

Tuberculosis

9.08 Tuberculosis still ranks high as the single communicable disease causing largest morbidity and mortality, despite the fact that the research studies conducted in Madras in the '50s proved beyond doubt that domiciliary treatment regimens are effective. The National Tuberculosis Control Programme has remained a rather restricted service providing diagnosis and treatment of sputum positive cases largely in urban areas. Large scale preventive immunization with the BCG is being practised. These services are rendered through the District Tuberculosis Organisation. Apart from ineffective coverage, the outreach of services has been very poor. It appears that better results will be available if the tuberculosis control programme is merged with general health services so that the peripheral primary health workers help effectively in early detection and better case holding. This indeed is the current strategy of the national programme. The alternative model proposed by us will make this possible.

9.09 The incidence and prevalence of the disease has not shown substantial reduction although the severity of the cases has been reduced due to effective drugs. There is an urgent need for in-depth epidemiological studies to understand the current nature

of the disease and for field operational research to develop effective methods for early detection of cases and for providing regular and continuous treatment, particularly with short-course regimens till the cases are cured.

9.10 The results of the Chingleput study conducted by the ICMR and WHO show that no protection is conferred by BCG vaccination in preventing bacillary tuberculosis of the lungs. However, we agree with the Government policy to continue the programme for vaccination of infants until the position with regard to BCG's ability to protect against childhood tuberculosis becomes clearer.

Malaria

9.11 The National Malaria Control Programme was started in 1953, covering all the malarious areas. However, in consonance with WHO recommendations, the control programme was switched over to eradication programme in 1958. In the early '60s, the programme met with considerable success. The incidence of malaria came down from 75 million cases in 1947 to a little over 100,000 in 1965 and annual mortality fell from 800,000 to nil. Unfortunately, there was a setback after this due to several causes such as rapid development of resistance to insecticides in vectors, non-availability of the right type of insecticides on time and their mounting costs, lack of adequate supervision, administrative indifference and inadequate allocation of funds. The Government of India, therefore, introduced a revised strategy which has improved the results to some extent. All the same, eradication of malaria has become a long-term objective and there is hardly any prospect of achieving substantial gains, unless a breakthrough in technology occurs.

9.12 There are four principal directions in which further efforts seem to be called for:

- (1) Continuous review of the programme should be made to improve its management by devising solutions to the

technical, operational and administrative difficulties experienced.

- (2) To overcome the resistance of vectors to insecticides, intense research is needed, not only to discover newer insecticides but also to develop effective bio-control methods and immunizing agents against the disease.

- (3) Alternative methods which do not need insecticides will have to be developed. For instance, larvivorous fish, fungi, bacteria, protozoa and other natural agents which destroy larvae, need to be tried on a large-scale wherever feasible, to achieve effective control. The engineering and environmental measures, which were in use in pre-DDT era for the control of mosquito breeding, need to be brought into operation once again. Source reduction, i.e. reducing the breeding places of mosquitoes, mainly by filling in pits or draining water collections, could also be an effective measure.

- (4) The programme should be integrated with general health services, where people play a major role, supported by technical assistance from the administrative echelons. The diagnosis and treatment of malaria and the measures employed for its control, viz. spraying of insecticides, eradication of breeding places of mosquitoes and other relatively simple procedures can best be undertaken by the people themselves under guidance and supervision. This is what we have proposed in the alternative model.

Cumulatively, these measures would go a long way in controlling the disease effectively, even if it is not totally eradicated.

Tetanus

9.13 Tetanus continues to be a major public health problem. The occurrence of neonatal tetanus with mortality rates of over 90 per cent is an indication of the poor maternity services and lack of hygienic practices. Even in the other age groups, tetanus ranks very high among the causes of deaths due to preventable communicable diseases. Fortunately active

and effective immunization against tetanus is known to be one of the best available and simple preventive measures discovered so far, and has virtually eliminated tetanus as a cause of death from many countries. It is totally feasible as a general public health measure to immunize the entire population against tetanus.

Diphtheria

9.14 The gravity of diphtheria tends to get undermined because of the nature of the disease which is deceptive. Many children below five years die of it undiagnosed and many more remain undetected. Hence there is an urgent need to strengthen the immunization programme against diphtheria during infancy and early childhood to eliminate deaths due to this truly preventable disease.

Leprosy

9.15 The National Leprosy Control Programme, which was started in 1955, has had only limited success, due mainly to technical and socio-cultural reasons. The main components of the programme are health education, case finding and treatment of detected cases with sulphones (DDS mainly). The programme is operated through leprosy control units and survey, education and treatment (SET) centres. The States where the problem is severe and widespread are Tamil Nadu, Andhra Pradesh, Maharashtra, West Bengal, Bihar, Karnataka and Orissa, which together account for over 75 per cent of all cases in the country.

9.16 DDS still remains the sheet-anchor of treatment. The newer drug Rifampicin is found to be useful as it has a knock-down effect and brings down the bacterial load. But it is still very expensive. There is, therefore, an urgent need for developing newer drugs and multiple-drug combination treatment, which could be effectively used for short-course therapy. The disease has remained an enigma so far. But the recent development of techniques in growing *Mycobacterium leprae* bacilli in the armadillo

and the newer vistas in the field of immunology offer promise for the future.

9.17 As in the case of tuberculosis, the major problems in leprosy also are failure to detect early and to provide continuous treatment. In an average it takes 5 years before an infectious lepromatous case is detected and 50 per cent of them do not take regular treatment. Consequently, the emphasis should be on field operational research to develop effective methods for early case detection and bringing those found positive under regular and continuous treatment. The integration of Leprosy Control Programme with general health services and the mobilization of the services of the Community Health Volunteers and Multipurpose Workers, rendering primary health care for early case detection and case holding is likely to have the greatest impact on leprosy control. It will also overcome the stigma attached to leprosy and leprosy workers. Side-by-side intensification of efforts in educating the public will be of immense help in detection and ensuring regularity of treatment as demonstrated in the projects at Pongiri and Aksha.

Hydrophobia (Human Rabies)

9.18 This is the most dreaded of the zoonotic infections. Mortality is 100 per cent. Most cases in humans can be attributed to dog bites. Millions of people die bitten by dogs and other animals every year and over a lakh of people die of hydrophobia. Although anti-rabic vaccine after exposure to animal bite plays a role in the protection against hydrophobia, the primary preventive measure lies in the control of canine rabies. We recommend the introduction of a National Programme against hydrophobia.

Poliomyelitis

9.19 Amongst the viral diseases, poliomyelitis and in recent years, Japanese encephalitis, have been posing serious public

health problems. While the majority of children get natural infection and acquire immunity to all the three types of polio viruses in early childhood, epidemics of poliomyelitis have been occurring with greater frequency in recent times. The occurrence of paralytic polio in children cannot be considered as negligible both in urban and rural areas. Polio immunization with oral polio in children cannot be considered as negligible both in urban and rural areas. Polio immunization with oral polio vaccine has been introduced mainly in urban and semi-urban areas. Although it is done routinely, mainly in metropolitan cities and some large towns, the efficacy of polio vaccine even when given at the right age in three full doses has been questioned by researchers. Maintaining the potency of the live oral vaccine even for use in routine immunization in favourable conditions in urban areas has been one of the major problems. Initial trials with the killed vaccine (Salk vaccine) are encouraging. The cost of production of the killed vaccine is, however, prohibitively high. The oral versus killed vaccine question as well as the epidemiological status of the disease in various parts of the country need elucidation.

Filariasis

9.20 The Filariasis Control Programme came into existence in 1955-56, but the progress has been rather slow and halting. Filariasis is endemic in the States of Uttar Pradesh, Andhra Pradesh, Tamil Nadu, Kerala and Maharashtra. The extent of the problem is still to be defined as only 176 out of the 290 districts in the endemic States have been surveyed so far. There are only 151 control units in the country for tackling the filariasis problem. Evidently many areas with filariasis problem are yet to be covered.

9.21 Filariasis was originally considered to be mainly an urban problem. Now it is realized that it also exists in vast rural tracts. The extension of the control programme to rural areas has thus been necessitated with its inherent problems of supervision, logistics in supply of larvicidal oil, etc. Furthermore, the areas affected by filariasis are fast spreading due to the movement of

population from endemic rural areas to urban areas, and vice versa.

9.22 At present, the filariasis control strategy is restricted mainly to anti-larval measure and detection and treatment of microfilaria carriers with diethyl carbamazine. This has not yielded satisfactory results and there is an urgent need for developing alternative strategies. Side by side, efforts should be made for enforcing satisfactory water management. Careful planning of water supply and sewage disposal in towns and cities needs particular attention to avoid creation of mosquitogenic conditions which favour the spread of filariasis. In rural areas, the Community Health Workers and MPWs could be effectively utilized for educating the people and taking the usual measures to prevent mosquito breeding by enlisting community support. In-depth epidemiological studies are necessary to fill in the various gaps in our knowledge on the transmission of the disease and the host factors involved. Research on the immunological aspects as well as development of newer drugs for the effective control of infection is also urgently called for.

Guinea-Worm Disease

9.23 This disease is caused through the use of step-wells, water in which gets polluted with the guinea worm larvae. It can be totally eliminated if step-wells are converted into draw-wells which is an important programme in improvement of rural drinking water supply anyhow. But as even this elementary service has still not been provided, guinea worm disease has become endemic in large parts of the country. The continued existence of this disease could be considered as a disgrace to our public health services. We recommend that a crash programme should be undertaken to eliminate this disease during the next ten years.

Japanese Encephalitis

9.24 Since 1955, overt cases of Japanese Encephalitis (J.E.) have

been reported sporadically from South India. However, since 1973, some districts of West Bengal have been experiencing large-scale outbreaks. In 1978, Kolar district of Karnataka and Tirunelveli district of Tamil Nadu, which were silent for a number of years, reported outbreaks of J.E. In the same year, i.e. 1978, outbreaks of J.E. involving a number of villages and towns were reported from some districts of West Bengal, Dhanbad district of Bihar, Dibrugarh and Lakhimpur districts of Assam, and several districts of Uttar Pradesh. Unfortunately, the epidemiology of the disease is shrouded in mystery; the work of the National Institute of Virology has shown that it is through mosquitoes, with pigs and certain birds probably acting as intermediate amplifiers. It is difficult to establish diagnosis under routine conditions. There is no specific treatment and the case fatality rate is sometimes as high as 50 per cent. The disease thus poses a serious health problem in several parts of the country.

A Programme of Action

9.25 The above review covers the major communicable diseases. It was not intended to be comprehensive and should be looked upon as illustrating the main problems to be faced in the field. But even this brief review highlights the fact that the situation about communicable diseases is dynamic: some diseases are under control; others show a varying response; new diseases appear and necessitate the evolution of new strategies to combat them; vectors develop resistance so that a search for new drugs becomes a continuous fight with diminishing returns; and even established strategies to combat a disease grow stale and ineffective and need revision. The fight against communicable diseases is thus endless; and eternal vigilance is the price one must pay for health also.

A Surveillance System

9.26 We have recommended elsewhere the creation of a national

information system (Para 13.10) which will include, as an integral part, a surveillance of the disease pattern in general and of communicable diseases in particular, when set up, this surveillance and monitoring system will undertake the following responsibilities amongst others:

- It will constantly monitor the everchanging pattern of communicable diseases with a view to getting earliest signals and devising appropriate action programmes. For this, it will build close relations with a network of epidemiological stations and other institutions;
- It will promote the necessary research to deal with continuing and new problems in communicable diseases;
- It will keep in touch with policy-making and administrative institutions for feeding its data and getting the needed decisions;
- It will train high-level personnel; and
- It will provide an extensive service to the health services, right to the community level to convey the results of its findings and to guide further action.

We recommend early steps in this direction because the problem is serious and brooks no delay.

Coordination

9.27 To achieve the best results, the programmes for the control of communicable diseases have to be properly coordinated, not only on the administrative side, but on the research side as well. At present, the national institutions dealing with problems of surveillance and research lie scattered under several agencies. The institutes doing research on tuberculosis, leprosy, cholera, diarrhoeal diseases, malaria vector control and virus infections are organised under the ICMR. The Salmonella and Shigella units are parts of the Microbiology Departments at Lucknow and at Kasauli. Staphylococcus, pseudomonas anaerobic infections units have also been set up by the ICMR on a

semi-permanent basis. Kala azar units, research on parasitic diseases and research on regional problems are also being organised under the ICMR. While this covers a very large area of communicable diseases the National Institute of Communicable Disease (which was formerly the Malaria Research Institute of India) continues to function under the Ministry of Health. There are other research and production centres like the Central Research Institute at Kasauli, the Pasteur Institute at Coonoor and Leprosy Institute at Chingleput managed by the Ministry of Health. There is an urgent need to bring all these organisations under one Agency so as to bring about coordinated efforts in research programme and providing enough data based on operational research for an effective and proper impact in the implementation of disease control programmes.

An Overview

9.28 During the last 30 years, we have eradicated or effectively controlled smallpox, cholera and plague. We recommend that during the next 20 years, our efforts should be intensively focussed on the eradication or effective control of diarrhoeal diseases, tetanus, diphtheria, hydrophobia, poliomyelitis, tuberculosis, guinea-worm, malaria, filariasis and leprosy.

(1) The first three, viz. diarrhoeal diseases, poliomyelitis and tuberculosis will be more amenable to treatment because of the emphasis we have placed on reduction of poverty, better nutrition, provision of safe drinking water, and improvement in environmental sanitation.

(2) Guinea-worm can be very easily controlled if step-wells are eliminated and direct contact between infected individuals and water sources is avoided. The diseases could, therefore, be fully eradicated as a result of the provision of safe drinking water in all areas.

(3) Malaria and filariasis will be more amenable to control through community effort to improve sanitation and prevent

the breeding of mosquitoes together with judicious use of insecticides and larvicides.

(4) Eradication of leprosy is a tough task, no doubt. We would be able to fight it better because of the increased support the programme will have in the larger developmental programmes and the reorganised health services.

(5) Research which will be qualitatively improved and expanded in the days ahead will provide us with better and more powerful tools to fight these diseases, especially through the advances in biological sciences. Similarly health education and the community-based alternative model of an integrated pattern of promotive, preventive and curative services will be powerful operative tools in a renewed and more intensive fight against all these scourges to improve the health of the people.

Non-communicable Diseases

9.29 In the present situation and for quite some time to come, communicable diseases will have a priority because they do cause a large proportion of morbidity and mortality, especially among the poor. But with nearly 100 per cent increase in the life-span and changes in life-style due to modernization and industrialization, other health problems are assuming increasing importance. Prominent among these are—cardio-vascular diseases, cancer, mental health disorders and occupational health hazards.

9.30 Rheumatic heart disease, leading to marked cardiac disability is prevalent in the developing countries and is closely related to poverty, afflicting children and younger age groups, during the peak productive period of their lives. A community prophylactic programme against this is an urgent need. The most commonly encountered cancers in India are cancer of the uterine cervix in women and cancer of oral cavity both in men and women. These have a strong socio-cultural predisposition and relationship with environmental factors. Similarly, mental

health disorders are assuming importance. Health hazards of agricultural workers, workers in various industries, pesticide toxicology, and environmental carcinogens are some of the thrust areas for study in the arena of occupational health. It is important to emphasize that for an adequate control and prevention of these and other new emerging health problems, non-pharmacological ways, e.g. change of life-style, have to be given utmost emphasis and the indiscriminate use of drugs should be scrupulously avoided.

10

Personnel and Training

10.01 The delivery of health services is essentially a team function which involves a large number of different categories of workers, each of which has its own unique role, responsibility and function. Moreover, the quality of a health service depends eventually upon its personnel—their general education, job specific training, dedication to the profession and commitment to the people. For the success of the alternative model of health services we have proposed here, it is therefore necessary to determine the different categories of personnel required (and the number of persons in each category) and make adequate arrangements for their selection and for their proper pre-service and in-service training. We propose to discuss these and related important matters in this Chapter.*

Review of Past Efforts

10.02 As the health system was almost exclusively curative and hospital-based in its approach, there was an emphasis on the production of doctors and nurses right from the start. Medical colleges were therefore established very early and maintenance of standards was emphasized. The career of a doctor soon became attractive because of the prestige and economic status

*Please see Statistical Table Nos. X and XI for details about health personnel and training facilities.

it gave. This was also the one field where Indians could go abroad and make a career for themselves. Consequently, the production of doctors increased fairly rapidly even before 1947 and since independence, there has been a virtual boom. At present, we have 106 medical colleges with an annual output of more than 11,000 doctors (against 19 colleges with an output of 1,200 doctors in 1946); and the stock of doctors has increased from about 60,000 in 1950 to about 250,000 at present. (Please see Statistical Table Nos. X and XI for details about health personnel and training facilities). The duration of training has now been uniformly raised to 4½ years followed by one year of internship. The prestige and attraction of the profession is still very high and it still has a lion's share within its ranks. Indian doctors still go abroad, although the market is gradually shrinking. The picture, however, has its own darker side. In spite of all expansion, doctors are still largely urban-based; and their distribution between different States is uneven. Standards have improved in some institutions and some sectors, but the average has declined considerably because of the proliferation of sub-standard institutions (this is what has happened in all branches of higher education). The medical education system and the health care delivery system have each gone their separate ways. There is little congruence between the role of the physician and the needs of society, little equilibrium between medical education and health care. Medicine is still regarded essentially as an enterprise of science and technology; the physician is the repository of all knowledge and dispensation; specialisation is the hall-mark of progress; and the training ground is the teaching hospital. Recent efforts to change this unhappy situation, to produce the 'right' kind of doctor and to give a community orientation to medical education have yet to make any meaningful impact.

10.03 The training of nurses, which began almost simultaneously with that of doctors, did not, however, make an equal progress. The social status of the profession has remained low and it has not attracted enough girls in many parts of the country. The unsatisfactory service conditions of the nurses (long and irregular hours of work, poor remuneration, low hierarchical status, etc.)

have also been a definite disincentive. The nursing profession therefore, has expanded comparatively slowly. There are now collegiate programmes leading to a degree—B. Sc. (Nursing)—and several post-basic courses. A large number of schools give training in general nursing and midwifery for nurses, and a few for health visitors. An even larger number of institutions train auxiliary nurse midwives (ANMs) for rural areas and lower positions in hospitals. The total output from all these courses is about 17,000 a year. There are now more than 150,000 nurses and midwives, more than 7,000 health visitors and about 55,000 ANMs. There is a separate National Council for Nursing.

10.04 During the last 30 years, there has been a vast proliferation of the number and types of paramedical personnel, based chiefly on the trends in the more affluent countries. When the programmes for the control of communicable diseases were first initiated, large vertical cadres of uni-function workers were created. Later on, these have been integrated into an horizontal organisation as Multipurpose Workers. On the whole, however, it may be said that the growth of the health care services in the country has been haphazard and unrelated to the needs of the poor and rural people who stand most in need of health care. Overcentralization of authority and compartmentalisation still continue to plague the services despite several efforts to bring about integrated comprehensive health care. The health personnel structure is still distorted; instead of a pyramid, it is more like an hourglass.

A Plan of Action

General Principles

10.05 It is obvious that this organisation of the health services has become counter-productive; and its radical reorganisation has become all the more urgent because we are changing our very approach to health care in a revolutionary manner and

proposing to introduce the alternative model described earlier. The following broad general principles should therefore, be kept in view in organising the health services of tomorrow:

(1) The value system in medicine is now changing; it continues to be science and technology based, but greater emphasis is now being laid on the cultural, social and even moral aspects of its action and purposes.

(2) Even from the technological point of view, there is no need to over-emphasize high technology or to create a mystic about it. Society will need all technologies from the simplest to the most sophisticated. Moreover, there is need for a continuous effort to evolve simpler technologies to deal with more complex problems rather than the opposite in which one often engages at present.

(3) The training of the health services personnel should be fully oriented to the people—their social, cultural and economic conditions and their health profile.

(4) The health services should be pyramidically organised—with a large base in primary health care and a narrow top in the specialized and highly specialized institutions.

(5) The preventive, promotive and curative problems should be defined accurately at each level, right from the village to the sub-centre, community, district, State and Central levels. This should be on the basis of actual studies and not on assumptions as at present.

(6) The skills, services and facilities required for each level must be defined on the basis of the above findings.

(7) The selection of personnel and their training should be on the basis of the requirements for the specific jobs they have to perform. The education level for the selection of candidates must be adequate and not excessive. Over-education is often counter-productive.

(8) Selection at the lower levels should be of persons from within the community itself.

(9) The service conditions should be properly defined and

more equitable than at present. There should be adequate avenues for promotion of all workers on the basis of ability and motivation. Transfers should not be abused, as is often done at present, for purposes of punishment or harassment. The services should function more on democratic than on rigid hierarchical principles, and more as a team sharing decisions and responsibilities than as bureaucracy organised on a vertical basis of authority.

(10) Training should be as close to the workers as possible (e.g. training for the CHV should be at the sub-centre and that for the MPW at the Community Health Centre and not at a distant regional place for sheer convenience of administration). It should be job-specific, decentralized, efficient and economic. The pre-service training should be adequate and effective and there should be sufficient provision for in-service education. There should be an emphasis on training different categories of functionaries together so that they learn to work together as a team.

Personnel for Primary Health Care

10.06 The Community Health Volunteers will provide the large base of the health care services. To begin with, there will be one CHV for every 1,000 population and later on, two (one male and one female). For an estimated population of 950 million in A.D. 2000, this will imply 1.9 million CHVs. The CHVs should be selected by the community and, as emphasized earlier, theirs is a part-time social worker's job, rather than a regularly encadred service; they are responsible to the community and get technical guidance and support from the health services. The best persons locally available should be selected; and although the present levels of their general education will be low (some elementary education or even less in difficult surroundings) there is no doubt that this will rise as general education spreads. The training should be organised at the sub-centre level. The initial training should not be less than 6 weeks, at least 30 per cent of this being in the field.

10.07 Multipurpose workers will be in charge of all promotive, preventive and curative activities at the sub-centre level and will form part of the regular service. Wherever possible, they will be recruited by promotion from the CHVs and their numbers will be one-fifth of the CHVs. The male MPW will be trained at the Community Health Centre for a year and a half. The female MPW will replace the existing ANM. The present ANM trained at the district hospital predominantly in curative medicine of the hospital-type acts neither as a nurse-midwife nor can she support the community workers. The female MPW of tomorrow will be selected wherever possible from the CHVs of the area, thus having practical knowledge of the problems of the village. She will be trained for one-and-a-half years at the CHC and its adjacent sub-centre to carry out the preventive, promotive and curative functions specific for the need at the sub-centre level. She will not only learn to operate a five-bed sub-centre but will impart continuous training and provide support to the CHVs under the sub-centre. Her most important task will be to guide and support the CHV and impart to her most of the health functions at the village level. In the training at the local CHC, she will learn the problems of referral of cases, and of working as a part of the CHC team.

Nursing Personnel and Health Assistants

10.08 It is desirable to have a cadre of nursing assistants trained at the CHC under the supervision of the trained nurse. They will be recruited from the female MPW of the area, and will undergo in-service training of one-and-a-half years, following which they will have the opportunity of going for further training to the nursing school at the District Health Centre and return as nurse to the CHC. The existing programmes of education in nursing will continue but will have to be modified in the light of the alternative model of health care proposed here. More intensive efforts are needed to popularize the nursing profession. From this point of view, better conditions of service and improvement in cadre status will be of great help. The creation of a huge number of posts of CHVs and

female MPWs will provide a better base of recruitment, and the situation will improve still further if a proportion of seats in the medical colleges are reserved for nurses who have outstanding work to their credit. Such recruits could be given condensed theoretical courses in the prerequisite general education, where necessary. The nurse should play a vital role in any health service organisation as she has not only to undertake nursing duty in a hospital but also, what is far more important, to look after the care of women and children who form three-fourths of our population. The number of nurses should therefore exceed the number of doctors. Unfortunately, even the ratio of one doctor to one nurse has not yet been reached.

10.09 On the same lines, it will be necessary to provide for the Community Health Volunteers (Male), and Health Assistants (Male). The general policies to be followed for recruitment, promotion, training, etc. should be common to male as well as female workers.

Paramedicals

10.10 It is neither feasible nor necessary to have a vast cadre of specialized paramedicals when the requirements of primary health care have been met. Emphasis should be placed on a few cadres of paramedical workers to undertake the types of work required at the CHC and district hospitals, viz. pathology, X-ray technicians, rehabilitation therapists, statistical assistants, etc. The recruitment can be from local candidates, and the training highly practical. The laboratory technician at the CHC should be able to undertake fifteen or twenty common pathology investigations which will comprise more than 95 per cent of the investigative needs of the CHC. Similarly, the X-ray technicians should be able to take and develop all routine X-rays. All technicians must be taught the routine service, maintenance and minor repairs of all the equipment which they will have to use. Highly specialized paramedical services should be restricted to the specialist and superspecialist centres.

Doctors

10.11 Basic and the most difficult decisions to be taken relate

to the doctors who have occupied the absolute central position in the health services so far and who will still continue to play a very important role in the new system.

(1) The first relates to numbers. How many doctors do we really need? At present, we have about 220,000 allopathic doctors, excluding about 600,000 registered and unregistered medical practitioners. About one-third of the allopathic doctors are in the public sector and the rest are in private practice which also includes all the other medical practitioners. In the alternative model proposed by us, it has been estimated that the country may need about 80,000 general duty officers, 35,000 general surgeons and physicians, 15,000 specialists and 3,000 superspecialists or a total of 133,000 doctors. As the quality of the public services improves, we may need less doctors in private practice and not more. Even as an outside estimate therefore, the country will not need more than 250,000 doctors. It is obvious that we are going in for an over-production of doctors with an existing stock of 220,000 doctors to which we add 13,000 new ones annually. As was pointed out earlier, this will be a colossal waste of human resources, apart from a serious threat to the health of the people. The whole position will therefore have to be reviewed and all our old concepts of doctor-population ratio will have to be revised. Till this is done, two immediate decisions will have to be taken:

- (i) there should be no new medical colleges and no increase in the intake of existing medical colleges; and
- (ii) there is no need at all to set up new and additional institutions to train additional doctors through short-term courses.

(2) The second is the need to reorient the training of doctors to specific social needs and to the specific jobs which they will be required to perform at different levels. For instance, the existing Flexnerised model will have to be abandoned and the effort in future should be to create the community-oriented doctor the society needs. It is unfortunate that, despite extensive changes that have taken place in many

medical colleges in India, there is little evidence that these have led to perceptible attitudinal changes, or involved these institutions in the full range of health problems of the community. Paradoxical though it may seem, the new community-oriented physician requires more support from the university, not less. There is need to present man and his environment as a biocultural science and the teaching of community medicine must rest on scholarly foundations and intellectual content, if it is to attract students and retain their enthusiasm. An inter-disciplinary holistic approach is needed which highlights ecology, epidemiology, human evolution, population dynamics, demographic patterns and health, fertility-disease interrelationship, host-parasitic interaction, human growth and development, human nutrition, man's impact on the biosphere, biological and health consequences of over-crowding, etc.

At the same time, the curriculum will also have to be severely more practical. For instance, instead of subjects like detailed morbid anatomy, surgery and rare diseases, time can be devoted to physio-pathology of common tropical ailments, communicable diseases and their management at the various levels of the health care system. While the doctor need acquire only a passing knowledge of the specialities, he should be able to confidently undertake procedures like vasectomies and tubectomies, giving of anaesthesia, treatment of simple injuries and fractures, first aid and transport of major trauma and use of forceps for deliveries.

The role of this new community-oriented physician will also include training, organising and assisting the health team of the MPWs and CHVs at the sub-centre and village level. He will have to learn to work as a member of a team. An important aspect of medical education should be a very practical field-oriented training in epidemiology and health education, working intimately with the community. He will have to be taught the principles of sociology and human behaviour, and the organisation and operation of the social and political structure of our society, both rural and urban. He will also have to learn the organisation and management

of health services, their cost effectiveness, logistics, personnel management, methods of purchase and accounting, medical audit, basic knowledge of vehicles and a host of other subjects which have been totally neglected in the present-day curriculum and without which he is lost when he enters active service.

(3) Doctors must have empathy with the people, reach them and be accepted by them. A deliberate effort has therefore to be made (i) to throw the net for recruitment wider so that more and more people whose social and cultural backgrounds are closer to the poor and underprivileged groups are selected and (ii) to ensure that the training process itself does not alienate the student from his own people.

(4) The training of doctors should also be conducted in close collaboration with the health care services. Since a medical college will require a minimum entrance of fifty students per annum, a college should be attached to every fifth District Health Centre, i.e. for five million population or approximately one student for every hundred thousand population per year. While the basic non-clinical science training will be at the medical college for a period of 1½ years, for the 2½ years of clinical training, ten students will be attached to each of the DHCs. The DHC staff will, in their turn, utilize their own 10 CHCs for the year of internship thus permitting the student to gain the experience of working in a situation as close, if not actually at the site of his/her eventual placement.

(5) There is also the question of the duration of the training course for doctors. It has been argued that the present course is too long and should be made much shorter. The other idea is to create an alternative category of doctors who would have had about three years of education. We are totally opposed to the latter proposal which will solve no problem and create several new ones. The first does merit expert examination.

(6) The over-emphasis placed in the present system on post-graduate students will have to be reduced.

(7) The remuneration of doctors and other health personnel

and the conditions of their work and services should be in keeping with the dignity and value of their profession. At present, there is a competitive race between different categories of workers and public servants to improve their own economic and working conditions, irrespective of any consideration of the claims of other groups or even the overall national interest and those who are most organised and can hold the public to ransom, get away with murder. Such a situation can satisfy none and spell national disaster. It is therefore necessary to enrole an appropriate incomes, wages and prices policy and to settle the remuneration and service conditions of all categories of public workers (including doctors) within its overall contours.

(8) There is also the problem of values which is coming increasingly into focus. There is no basic conflict between a truly professional attitude and trade unionism. But if trade unionism becomes strong when the growth of truly professional attitudes is still weak, a value crisis arises as the profession tends to put itself before service and even the possibility of developing a professional attitude in course of time is destroyed in the bud. Unfortunately, this is now happening even among doctors, and this poses a major challenge in the training and organisation of medical services.

Specialists

10.12 Specialization will comprise the broad-based specialities like general surgery, general medicine, gynaecology, paediatrics and public health and other narrower specialities like cardiology and cardiac surgery, neurology and neuro surgery, nephrology and urology, or plastic surgery. There will be a much larger requirement of general surgeons and physicians who will work, not only at the district, but also at the CHCs and will form the basis of the specialist services. The selection for specialist training will be from the cadre of the doctors after at least three years of practical experience. They will all be trained primarily in one of the four basic specialities for a period of three years, chiefly at the DHC,

though a part of the training will be at a CHC where they will eventually return. Their training will be chiefly under the senior surgeon and physicians of the DHC who will be recognised teachers of the medical college, but they will also be exposed to the various specialists who work at the DHC. A highly practical and broad-based training should enable them to deal with all but the most complicated problems at the CHC. It may also be recalled that, in the alternative model, the general surgeon and physician, even at the distant CHC, will have the advantage of regular consultation visits from the various specialists of the DHC and be able to refer major emergencies and 'cold' problems to the DHC when necessary.

Superspecialists

10.13 The training of the superspecialist will be conducted at the speciality centres following general surgical, medical or public health training and will be for a further period of two years. Since the majority of the posts of superspecialists will be at the DHC, the teachers of these superspecialities must be aware of the conditions under which the student will eventually practise and train them accordingly.

Training in Public Health

10.14 As indicated in Chapter 7, the medical officers in-charge of the Community Health Centres, the District Health Centres, and all the administrative ranks/posts equal to or above these (CHC & DHC) should either possess qualification of a postgraduate degree in Public Health, or in case of those possessing a postgraduate degree in clinical discipline, a postgraduate diploma in Public Health (This could also be called Master of Public Health). This would necessitate substantial increase in the facilities for higher training in Public Health specialities such as Health Administration, Epidemiology, Public Health Engineering, Occupational Health, etc. Today we have only one Institute, i.e. the All India Institute of Hygiene and Public

Health at Calcutta. We recommend that a chain of such postgraduate institutions in Public Health (Schools of Public Health as in other countries) should be established on a regional basis.

Continuous Education

10.15 A major failure of our entire education system including that of medical education is that it is a once-for-all phenomenon. Whether it be the doctor, nurse or paramedical worker, there is neither the facility nor incentive for further education after passing the qualifying examination. This leads to stagnation of knowledge and skills. Expenditure on providing facilities and incentives for continuous training would be amply repaid in the improved quality of services rendered. It could also permit a reduction in the period of initial training. Continuous education may be undertaken by the following methods:

- (i) Incentive to promotion through regular examination,
- (ii) Local and regional meetings for training and discussion of problems,
- (iii) Expenditure on library facilities at all levels,
- (iv) Promoting journals relating to national health problems including those dealing with epidemiology and the delivery of health care,
- (v) Dissemination of relevant topical information to all paramedical workers including CHVs by mailing simple but attractive weekly pamphlets. The production of material can be centralized and then followed by decentralized publication and distribution after translations into local languages and adaptation for local needs,
- (vi) Regular weekly and monthly in-service training of CHVs and paramedical workers by the next higher cadre and provision of training material and teaching aids for this purpose.

- (vii) Greater use of professional organisations for the purpose.

The Medical and Health Education Commission

10.16 It should be recognised that the problems of manpower and training are continuing problems, in the sense that the policies regarding them will have to be reviewed from time to time as circumstances change. These can, therefore, be best dealt with by a continuing, autonomous and academic organisation and *not* through *ad hoc* committees or bureaucratic agencies. And yet we have not created any such adequate agency for the purpose and have mishandled them because of *ad hoc* decisions taken from time to time. This is one of the major reasons why our manpower and training policies are in such a mess. The recommendations of the Srivastava Committee regarding the creation of a Medical and Health Education Commission are very relevant in this context and have been reproduced below in full.

“7.21 The story of developments in medical education is not any different from that of developments in general education as a whole. We have been able to identify that basic issues in the reform of medical education such as

- determination of the objectives of undergraduate medical education and especially the overwhelming need to give a community orientation to it;
- revision of curricula, production of learning and teaching materials, adoption of suitable teaching methods, examination reform, improvement of facilities in medical colleges, preparation of teachers and such other issues for the attainment of these objectives;
- reform of hospitals attached to medical colleges and their integration into a scheme of national referral services complex;
- determination of the right duration of the undergraduate course;

- reorganization of the premedical course in 10+2+3 pattern and of the programme of internship;
- the future of the first year of junior residency;
- provision of continuing education;
- postgraduate education and research;
- evolution of a national system of medicine;
- studies of medical manpower needs ;

and so on. We recognize that these problems have now become extremely urgent and complex and demand early and satisfactory solutions. All our attention in the last few years has, however, been devoted mainly to defining the *content* of change and we have any number of excellent recommendations from all sorts of *ad hoc* bodies. It is time we realize that a mere discussion of the content of change, however continuous and learned, cannot bring about the change we need and may even confuse the issues. The fact is that *there is no structure to bring about the needed changes* and in the absence of the structure, the question of *initiating the change process* does not even arise. In a situation of this type, we see little purpose in producing one more learned report and in making yet another series of pious and well-meaning recommendations on the content of the reform of medical education. We may do it as well or as ill as any other group of seven persons and the exercise will meet the same fate as that of earlier attempts on the subject. It is therefore of the utmost importance that a *suitable structure or an organizational framework should first be established which is charged with the task of implementing the needed reforms and of initiating and nursing the change process*. We are thus convinced of the need for the establishment of a UGC-type body for medical education and reaffirm the recommendation made on the subject by the Education Commission (1964-66). In the absence of some such machinery with the authority and resources to implement the desirable reforms, we are afraid that the quality and relevance of medical education may continue to remain as a *no man's land* between the Centre and the States; and without such a structure, there is no possibility of initiating a change process to

ensure that medical education advances to keep pace, not merely with advances in medical knowledge and technology, but also with the needs and priorities of national health.

“7.22 Several other equally weighty considerations can be advanced in support of this proposal. We have already shown that the organization of a national programme of comprehensive health services cannot be attempted unless the entire pattern of medical education is overhauled and that this, in its turn, cannot be attempted, in the absence of an organization, with adequate authority and funds, to decide the complex issues involved, and to implement the decisions through a vigorous and sustained programme of action. The co-ordination and maintenance of standards in higher education (including general, agricultural, engineering and medical education) is a constitutional responsibility of the Government of India. Institutional and financial arrangements to give effect to this responsibility have been made under the UGC (for general education), ICAR (for agricultural education) and the AICTE (for engineering education). The important field of medical education has unfortunately no such arrangements; and the neglect of this constitutional responsibility of the Centre all these years is absolutely indefensible. The case for the creation of a structure for the reform in medical education is further strengthened by the failure of all earlier attempts to reform medical education through report after report, and recommendation after recommendation of committees, conferences, working groups, seminars and the like. Let us not forget that the reform of medical education is not a one-shot affair. It needs continuous reaction between the output of the system and its management, between the Centre and the States, and between universities and institutions of medical education. No such reaction is possible unless there is a suitable structure charged with the responsibility of reforming medical education in all its aspects.

“7.23 We therefore recommend that immediate steps should be taken to set up, by an Act of Parliament, a medical and Health Education Commission for co-ordination and maintenance of standards in health and medical education. It should be broadly patterned after the UGC with a whole-time Chairman who

should be a non-official and a leading personality in the field of health services and education. The total membership should be between 9 to 15, one-third representing the Central and State Government and the universities, one-third representing the various national councils and one-third consisting of leading persons in the field of health and medical education and services. Its role should be promotive and supportive and it should be responsible for planning and implementing the reforms needed in health and medical education. It should have the necessary administrative machinery and steps should also be taken to place substantial resources at its disposal in the Fifth Five Year Plan so that it can start vigorously and become effective.

“7.24 We have deliberately used the term “Medical and Health Education Commission”. Let us not forget that, in the totality of health services, the doctor is the most important but not the sole functionary. Equally important are a variety of paramedical personnel who constitute important links of the health service. The nurse, the pharmacist, the technicians in the field of laboratory service such as X-ray, pathology, or micro-biology form the essential back up of medical care. The dentists provide a specialized service in an important and related field. Any programme of training that aims at improving the quality of medical care, or restructuring of the system of medical education towards community care, must recognize the need of assessment of the educational needs of all these other categories of medical and paramedical personnel. What we need, therefore, is an organization not only for the reform of the undergraduate or even the whole of medical education, but an organization which will be responsible for the reform of the entire field of health and medical education in all its aspects.

“7.25 It is for this reason that we are proposing that the Medical and Health Education Commission shall have on it the representations of all the relevant national councils and that it will also work in close collaboration with all of them. The oldest, largest and the most important of these is the Medical Council of India. The others include the Dental Council of India, the Pharmacy Council of India and the Nursing Council of India. We would like the prestige, the authority, and the

goodwill of all these Councils to be fully utilized for purpose of bringing about an early and effective reform of medical and health education. As everyone is aware, the organization of all these Councils leaves a good deal to be desired, especially because they were originally set up only to exercise an indirect regulatory function while we are now proposing to vest them with promotive and supportive functions as well. We therefore recommend that the Government of India should open negotiations with all these Councils and amend their Acts, especially with the purpose of making them operationally more viable and efficient to discharge the regulatory, promotive and supportive functions for the improvement of medical and health education. We would also appeal to all these Councils to cooperate with the Government in this programme. In particular, each Council should be required to set up an education panel on prescribed lines and the Medical and Health Education Commission should be under a statutory obligation to implement its programmes of reform and also to operate its financial powers in consultation with the panel of the concerned Council. This will make full use of all the prestige, authority, goodwill and expertise of all the existing Councils and strengthen the hands of the proposed Medical and Health Education Commission in functioning as an apex co-ordinating organization and in implementing a radical programme of reform in medical and health education.

“7.26 We would like to make it clear that the regulatory functions which are now being exercised by the Councils will continue to vest in them unchanged. In addition, they will also take on the responsibilities of advising the Medical and Health Education Commission on promotive and supportive measures in their respective fields.

“7.27 It is our considered opinion that the most important step now needed is to establish the Medical and Health Education Commission. It will be the responsibility of this Commission to then start the process of change and to nurse it to grow. The sooner this basic reform is implemented, the better it will be for the future of medical and health education and all that will follow therefrom.”

We support all these recommendations. We further recommend that such a Commission should also have on its Committees senior persons from other disciplines such as sociology and education and also some eminent persons from the general community who command national respect. Such representations will help the Commission to maintain the broader objective of medicine which is, health for the people.

11

Drugs and Pharmaceuticals

11.01 An outstanding feature of the modern health services all over the world is that drugs, which were earlier a small appendage to the health services, have now become almost central to their existence. As stated earlier, this is due partly to the commodity concept of health and partly to the tremendous energy and propaganda capacity of a profit-motivated private drug industry. In 1977, the total, at retail prices, of all pharmaceutical products sold in the world was estimated at US \$ 75 billion.

Drugs and Pharmaceuticals in India

11.02 Although the foundations of our pharmaceutical industry were laid in 1901 by Acharya P.C. Roy by establishing the Bengal Chemical and Pharmaceutical Works, the country largely depended on imports from abroad for its essential drug supplies till 1947. In fact, the drug industry of this period was, except for a few simple drugs or materials which were locally produced in small establishments, mainly a packaging enterprise which imported tablets, ointments, etc. in bulk and repacked them.

11.03 During the last 30 years, there has been a phenomenal growth of the drug industry in four main sectors. The establishment of the Hindustan Antibiotics Ltd. (HAL) in 1954 and the Indian Drugs and Pharmaceuticals Ltd. (IDPL) in 1962 by the

Union Government were important landmarks in the history of the pharmaceutical industry, particularly with respect to building-up of the basic drug industry. The multinationals began to manufacture their preparations in the country; many Indian enterprises were started; and there was also encouragement to the small-scale sector to produce certain drugs. The total output of the industry increased a hundredfold—from Rs. 100 million in 1947 to Rs. 10,500 million in 1978-79 (at current prices). This was due to expanded production, especially of an ever increasing number of sophisticated drugs, and rising prices. The index of production rose from 64 in 1960 to 165 in 1979 (1970=100). The drug industry has enjoyed a higher man-average profitability so that investment therein has increased substantially from Rs. 240 million in 1952 to Rs. 4,500 million in 1977. There are about 125 large and medium factories and nearly 3,000 small-scale sector units engaged in this industry which provides employment to about 100,000 workers.*

11.04 The functioning and growth of the drugs and pharmaceuticals industry has engaged the attention of the Government over the last several years. As a culmination of the efforts of the Government in controlling this industry, the Committee on the Drugs and Pharmaceuticals Industry, popularly known as the Hathi Committee, was constituted. On the basis of its Report, the Government announced a new drug policy whose broad principles and objectives are as follows:

- (1) To develop self-reliance in drug technology;
- (2) To provide a leadership role to the public sector;
- (3) To aim at quick self-sufficiency in the output of drugs and to reduce the quantum of imports;
- (4) To foster and encourage the growth of the Indian sector;
- (5) To ensure that drugs are available in abundance in the country to meet the health needs of our people;
- (6) To keep a careful watch on the quality of production and prevent adulteration and malpractices;

* Data supplied by Ministry of Chemicals and Fertilizers, Government of India, New Delhi.

- (7) To offer special incentives to firms which are engaged in research and development; and
- (8) To provide other parameters to control, regulate and rejuvenate this industry as a whole with particular reference to containing and channelising the activity of foreign companies in accord with national objectives and priorities.

We propose to discuss the main aspects of this policy and the changes needed therein.

Pattern of Drug Production

11.05 A careful analysis of the drug policy, which speaks mainly of self-reliance and 'abundance' of drugs to meet our health needs, shows that it does not lay special emphasis on the *pattern* of drug production. It is not enough to see that drugs are produced by Indians and in abundance. It is even more important to see *what* drugs are produced and for *whom*. There is now an overproduction of drugs (often very costly) meant for the rich and the well-to-do while the drugs needed by the poor people (and these must be cheap) are not adequately available. This skewed pattern of drug production is in keeping with our inequitable social structure which stresses the production of luxury goods for the rich at the cost of the basic needs of the poor.

11.06 There are also other reasons responsible for this sad state of affairs. The pharmaceutical industry in India is the result, in an essential sense, not of the indigenous development of the industry, but only the off-shoot of the development of the industry in the Western world. Naturally, the pattern of drugs produced in India is considerably influenced by the pattern of diseases prevailing in those countries (where longevity is generally higher) and there is prominence of diseases of old age such as high blood pressure, heart diseases, cancer, and degenerative diseases. On the other hand, in poor countries like India where the longevity is considerably lower, these diseases are naturally

not as prominent and the main causes of morbidity and mortality are the diseases of poverty: gastrointestinal diseases, other water-borne diseases, diseases arising out of lack of preventive immunization or malnutrition, tuberculosis, leprosy, etc. Naturally, when a drug production pattern is transplanted from a developed country to a poorer country, the production pattern tends to be unsuitable for the needs of the latter. Similarly, the fact that the drug industry in India is in private hands which produces mainly for profit also results in a situation where the drugs required by the poor are not produced on the main ground that there is no profitable market and adequate demand for them, while the country continues to be flooded by a plethora of costly and wasteful drugs meant for the minor illnesses of the rich and well-to-do. For instance, the production of INH for tuberculosis and of Dapsone for leprosy is only one-third and one-fourth respectively of minimal requirement. On the other hand, tonics and vitamins, most of which are alcoholic preparations and "spin" money, are produced in wasteful abundance.

11.07 The National Committee on Science and Technology (NCST) and Task Force appointed by the Planning Commission, carried out a study of the existing product pattern of drug manufacture. This study reveals that the pattern of drug manufacture does not conform to the real social needs of the country. Interestingly, the industrial units are vying with each other to create market needs for overwhelmingly irrational products rather than manufacturing something that meets our real social needs. Out of a total production of Rs. 700 crores in 1976, 25 per cent is taken away by vitamins, tonics, health restoratives and enzyme digestants mostly consumed by the relatively well-fed urban population. Twenty per cent is covered by antibiotics, only 1.3 per cent by sulphonamides (a very cheap and useful anti-infective) and 1.4 per cent by antituberculosis drugs—a disease, the incidence of which has been computed to be of the order of nearly 1.8 per cent of the urban and rural population. Dapsone, the basic drug for leprosy costing only Rs. 5 per a year's treatment, is always in short supply.

11.08 We therefore strongly recommend that the pattern of drug production in the country should be oriented closely to the disease pattern. The drugs required by the poor should be produced in adequate quantities and at the cheapest prices possible. If the private sector cannot do it, the public sector should be adequately strengthened for the purpose. If necessary, Government should come forward to purchase the drugs produced in adequate quantities at 'fair' prices and make them available to the people at subsidized prices. In particular, steps will have to be taken to see that the simple drugs required at the community level* are manufactured in adequate quantities and made available at as low prices as possible. Similarly, a list of basic essential drugs shall be prepared and the requirements of these drugs should be calculated on the basis of the prevailing disease pattern. All the necessary measures should be obtained to ensure that these drugs are available in adequate quantities and at reasonable prices.

11.09 There is also need to prevent the production of high-priced useless drugs which are put on the market for making profits. They harm even the rich and well-to-do. But they do not remain restricted to them only. They have a demonstration effect which misleads the poor also and becomes an additional channel for their exploitation. It is also necessary to caution against the policy of producing drugs in 'abundance'. While the production of drugs should be adequate, excessive production has its own dangers: the doctor and the drugs producer join hands to over-medicalize health care. This should be prevented.

11.10 One of the most distressing aspects of the present health situation in India is the habit of doctors to over-prescribe or to prescribe glamorous and costly drugs with limited medical potential. It is also unfortunate that the drug producers always try to push doctors into using their products by all means—fair or foul. These basic facts are more responsible for distortions in drug production and consumption than anything else. If the medical profession could be made to be more discriminating in its prescribing habits, there would be no market for irrational and unnecessary medicines.

* Please see page 186 for details.

11.11 The following Table shows the production of bulk drugs and formulations in 1978-79.

Production and Import of Bulk Drugs and Formulations

(Rs Millions)

Sector	Bulk drugs		Formulations	
	1978-79	% of total	1978-79	% of total
Public	539	14.6	600	5.7
Indian private	825	22.3	3,400	32.4
Foreign	616	16.7	4,600	43.8
Small scale	220	5.9	1,900	18.1
Domestic production	2,200	59.5	10,500	100.0
Imports	1,500	40.5		
Total	3,700	100.0		

SOURCE : *Economic and Commercial News* No. 11, March 15, 1980 and *Performance Budget* 1980-81, Ministry of Petroleum, Chemicals and Fertilisers.

11.12 It will be seen that we still import over 40 per cent of our requirement of bulk drugs. It is necessary to develop a programme of early self-sufficiency in this sector. In particular, the small-scale sector can play a very important role in this field and should receive all encouragement, subject to strict quality control.

11.13 It is a matter of satisfaction that we have achieved self-sufficiency in respect of formulations. But nearly 44 per cent of the production is in the hands of the multinationals. The share of the public sector also is small. The number of formulations is very large (some 30,000) and these need to be rationalized and reduced.

The Structure of the Industry

11.14 The existing drug policy rightly emphasizes the attainment of self-sufficiency in the production of drugs, in increasing the

share of the Indian producers and in giving a more significant role to the public sector.

11.15 The foreign companies account for about 40 per cent of the total drug production in the country; their share in the production of basic drugs was about 28 per cent and that in formulations, 44 per cent (1978-79). This is still high. It is necessary to accelerate the pace of Indianization over the next two decades. The conditions are very favourable for such a move because

- the patents of several drugs developed in the '40s to '60s have started to expire;
- the needs of the disease pattern in India can be met by old established drugs whose patents are expiring; and
- the country has now developed the needed sophisticated engineering industry and skilled manpower.

The time for rapid Indianization is therefore at hand. A right step taken already in this direction is to reserve areas of various products to the different agencies. It is now for our businessmen, scientists, and engineers to take up the challenge.

11.16 The basic policy of the Government to emphasize the public sector is right. Unfortunately, the public sector in drug industry (as in others) has not come up to expectations. Urgent steps are therefore needed to improve the efficiency of the public sector. It has to assume far greater responsibilities in the days ahead to meet the drug needs of the poor which, as was stated earlier, the profit-motivated private industry is unwilling or unable to do.

11.17 Three other issues in drug production need emphasis.

- (1) The small scale sector needs to be encouraged, subject to strict quality control.
- (2) It would be desirable to introduce the cooperative sector.
- (3) Drug production by village communities for their own

use (e.g. through cultivation of herbs) should be encouraged. As stated earlier, this should be an important activity at the community level.

Price Control

11.18 One of the most important and vexed issues in the drug industry is price control. Such control is necessary because the drug manufacturer tries to put up the prices as high as possible to make profits and drug sales have a monopoly character because the consumer is not free to buy what he likes; he must purchase what the doctor has prescribed. It is only the State that can protect his interests through price control mechanisms. The Government is aware of this and a drug price control order has been in force from 1962. But in spite of all that has been done, the drug prices are high and continue to rise. In some instances, Indian prices are even higher than the international ones. Better planned and more vigorous action is therefore called for.

11.19 Some of the steps which can help in price reduction are the following:

(1) Packaging increases the cost of drugs very greatly because the trend is to make it attractive and highly elegant and to add cosmetic embellishments to promote sales. This should be discouraged. Packaging should ensure undamaged transit, freedom from impurity or adulteration, and prevention of deterioration by exposure to ambient temperature and moisture. All these conditions can be fulfilled without excessively increasing the cost. It should also be possible to supply drugs to hospitals, etc. in bulk packages to reduce cost. Similarly, the mark up allowed for overheads can also be significantly reduced.

(2) The manufacture and marketing of a new drug in this country by a multinational should be carefully watched. There may indeed be a glut of applications for the introduction

of 'Me-Too Drugs' which will not attract new legislation for another five years in regard to price control. (Unfortunately, this precaution will be needed for Indian manufacturers also). As stated earlier, genuine "break-through" research has declined in recent times. Unless the new drug is of vital national importance it should not be licenced. Drugs banned in other countries should not be allowed in India.

(3) It is important to ensure that the prices of essential drugs are kept down to the extent possible. The existing price of drugs including those of essential drugs of everyday use is highly inflated. For example, the cost of Analgin sold over the counter is 30 times the cost of production. Drug prices can be drastically reduced if the above-mentioned recommendations are adopted. A list of essential drugs should therefore be drawn up. A more liberal profit margin may be allowed for the non-essential drugs.

(4) Prices are often inflated by the use of brand names. It is therefore necessary to introduce generic names only and to ban the use of brand names in respect of all drugs required for common diseases. In fact, all essential drugs should go generic as recommended by the Hathi Committee.

(5) The proliferation of drugs by minor variations in composition should be totally discouraged.

Very often, prolonged controversy over the price of a drug results in stopping its production. This should not be allowed to happen in case of essential drugs; either the drugs should be produced by the public sector at prices fixed by the Government or prices should be revised. There must also be some flexibility with regard to the prices for basic drugs: they should be low and yet attractive enough to stimulate production. If the pricing policy adopted is rigid, it is possible that investments would fight shy, which would make our goal of self-reliance difficult. In fact the bill for import of bulk drugs, intermediates, solvents, etc. has jumped from Rs. 53.77 crores in 1976-77 to about Rs. 119 crores in 1979-80. The drug industry, particularly the sector engaged in production of bulk drugs, must be provided adequate incentives if the country has

to become self-reliant in the near future.

Some Other Issues

Quality Control

11.20 Quality control of drugs is extremely important. It is necessary to prescribe realistic standards (not those mechanically copied from books) and to enforce them uniformly in all parts of the country. The drug control organisation needs to be strengthened. It will be essential to prescribe criteria and processes for the quality control of indigenous medicines also since health programmes are dependent on adequate supply of drugs of assured quality. The need for an effective quality control machinery does not require any emphasis.

Research and Development

11.21 The new drug policy lays a stress on achieving self-reliance through expanded production and promotion of research and development. India has made significant advances in formulation technology and is now capable of transferring this technology to any developing country. Advanced and sophisticated drug delivery systems such as silastic implants or liposomes, etc. are being investigated by Indian scientists. The need of the hour, therefore, is to develop technology for the production of intermediates and bulk drugs. For this, it is essential to pick out drugs from category I and II and concentrate on developing R & D in these specific areas. Where technology already exists, innovation should be attempted to increase yields and to reduce overheads. In order to stimulate research in process development there ought to be greater collaboration between the universities, national laboratories and industry. Greater financial investment will be needed.

Consumption of Drugs

11.22 At present, the supplies of drugs to urban and rural

institutions within the health care system is very uneven. In an urban hospital, for instance, the drug cost is Rs. 6 per patient per year while in a PHC, it is about 40 paise per patient per year. Obviously, some levelling is needed. The drug costs are always a small part of the total cost of health services. If all essential drugs are made available at reasonable prices, health care costs will fall further. It may, therefore, be an advantage to move in the direction of a partial support system under which all patients bear at least the cost of drugs, which they are generally willing to do.

Revised Drug Policy

11.23 In the light of the foregoing discussion, it is necessary to amend the existing drug policy suitably. As recommended by the Hathi Committee, it will also be desirable to have a National Drug Authority to implement this new and comprehensive drug policy and to deal with all aspects of this complex and important problem.

An Overview

11.24 We recognize the value and significance of drugs in the health care system. We fully support the policy that all the essential drugs should be produced in the country, preferably in the Indian sector, and that they should be made available to the people at reasonable prices. To realize these objectives, it is essential to lay down and vigorously implement a national drug policy which will ensure that the pattern of drug production in the country (barring drugs meant for export) should be geared to its actual needs. While the supply of drugs should be adequate, eternal vigilance is required to ensure that the health care system does not get medicalized, that the doctor-drug-producer axis does not exploit the people, and that the 'abundance' of drugs does not become a vested interest in ill-health.

11.25 Essential Drugs Needed at the Community Level

Name of Drug	Use
1. Aspirin	As analgesic, as antipyretic, in rheumatic arthritis, etc.
2. Chloroquine	In malaria, amoebiasis, giardiasis, taeniasis (tape worm infestation), in the acute manifestations of lepra reaction, etc.
3. Sulphonamides	In bacillary dysentery, urinary tract infection, meningococcal meningitis, chancroid, trachoma and inclusion conjunctivitis, etc.
4. Streptomycin	In tuberculosis, urinary tract infections, meningitis, bacteriemia and bacterial endocarditis, respiratory tract infection.
5. Penicillin	In respiratory tract infection, rheumatic fever, meningitis, osteomyelitis, otitis media, etc.
6. Isoniazid	In tuberculosis.
7. Thiacetazone	In tuberculosis.
8. Dapsone (DDS)	In leprosy, <i>P. falciparum</i> (malaria).
9. Piperazine	In roundworm infestation, also in threadworm infestation.
10. Mebendazole	Anti-helminthic.
11. Diiodohydroxyquinoline	In amoebiasis.
12. Metronidazole	In intestinal and hepatic amoebiasis, trichomoniasis, giardiasis, etc.
13. Ferrous sulphate	In iron deficiency. anemia.
14. Vitamin A	In Vitamin A deficiency, prophylaxis, etc.
15. Vitamin B Complex	In generalised avitaminosis B, or deficiency of any vitamin of B-complex group as in prophylaxis.
16. Thiocarbazine	Filariasis.
17. Sulphur ointment	In scabies, psoriasis, ring worm infestation, lupus erythematosus, etc.
18. Oral rehydration salts	In dehydration

These essential drugs are in keeping with the present disease pattern in the country but are available in very limited quantities. There is no official study estimating the actual requirement of these for the country as a whole.

12

Research

12.01 Research is always a major instrument for development, policy formulation and effective implementation. In the years ahead, its significance will be greater still because of the large scale and complex programme of health development proposed to be undertaken and the consequent urgent need to watch closely the changing situation and the impact of strategies adopted, with a view to taking the needed corrective action in time.

Review of Earlier Efforts

12.02 Research in 'tropical diseases' has a long history in India which goes back to the establishment of the first bacteriological laboratory in Agra in 1892. Malaria, cholera and kala azar were some of the diseases to which research in India made a valuable contribution. Despite this, the Bhoire Committee (1946) reported that, although the extent of research in medicine was considerable, the quality was not consistently high. It also regretted the dearth of research in medical colleges and teaching institutions. It gave high priority to clinical research and to research on malaria, nutrition and social and environment factors in relation to health and disease. It advocated the setting up of an all-India medical institute.

12.03 The Mudaliar Committee also looked into the progress of medical research. It commended the progress of research in

plague, malaria, cholera, kala azar, T.B., leprosy and other 'tropical diseases'. It found that most of the research activity was confined to ICMR institutions or government organisations and that the state of research in colleges continued to be the same as in the past. As a remedial measure, it suggested the recruiting of a special cadre of research workers in the institutions.

12.04 There is considerable research activity at present. The Indian Council of Medical Research (ICMR) maintains 16 research institutions and funds research projects in other institutions, government, private or teaching. Some of the significant areas in which research is undertaken are tuberculosis, leprosy, cholera and other enteric diseases, nutritional disorders and nutritional surveys, fertility regulation and the investigation of viral disease like the Kyasanur forest disease, dengue, and Japanese encephalitis.

12.05 Several voluntary agencies and private institutions are also conducting research, the former being particularly prominent in the field of health services delivery. Of the 79 research undertakings in health services research, approximately 52 per cent are run by non-government or voluntary agencies, foreign and Indian. Of the others many are partly supported by funds from agencies abroad. There have been few attempts at evaluating these projects or institutions. Clinical research conducted by private institutions is uncoordinated and is not monitored adequately.

12.06 Pharmaceutical multinationals also conduct some biomedical research. They spend a large proportion of their research allocations on establishment and salaries and in some cases, on market research for their products. Many drug companies are involved in conducting projects for their principals abroad because project costs work out cheaper in our country. They also undertake drug trials in hospitals. Another major area of interest to them is research into formulations and testing of formulations in tropical conditions. Few, if any, of their projects are engaged in developing new drugs suited to our problems.

12.07 The financial investment in research is not high (the

ICMR Sixth Plan stands at Rs. 800 million) but paucity of resources is not a major hurdle to progress. The main problems appear to relate to selection of areas for research, its quality and utilization, improvement in research capability and attainment of indigenous self-reliance. Lack of availability of properly trained research workers and a failure to nurture them by providing adequate financial and job satisfaction is a major handicap to the development of research.

A Programme of Action

12.08 We recommend that the research effort in health problems be considerably stepped up over the next two decades. This implies the enunciation of a comprehensive and precise research policy and its sustained implementation. Some of our major proposals for this have been indicated below.

Priority Areas in Research

12.09 There is need to define priority areas for research which should be oriented to the new comprehensive national policy on health. The central focus of activity should be the problems of the underprivileged and poor whose health status has to be raised, and the alternative model of health care services we have recommended. Subject to this general statement, some of the priority areas for research during the next 20 years would be as follows:

- (1) Health services research should have very high priority. Of social interest in this regard is primary health care whose different aspects (such as information support, manpower development, appropriate technology, management and community involvement) need close and continuous study. Since administration has been a weak spot, research for improving administrative practices is very relevant.

- (2) Epidemiology is another important area of significance. It is necessary to build up an adequate data base for the proper development of the health programmes.
- (3) Communicable diseases are still a major cause of morbidity and mortality. This will, therefore, continue to be a major field of biomedical research even in the years ahead. Emphasis should be laid on epidemiological, microbiological and immunological approaches and on socio-cultural research to enhance the acceptability of useful technology.
- (4) Diarrhoeal diseases, especially among children, should receive greater attention. Studies of curative practices like rehydration are as important as those on the environmental aspects of the disease.
- (5) Nutrition, one of the old areas of research, will still continue to be a priority area. Emphasis should be on the study of food production, distribution and consumption as one system. This is a field where multi-disciplinary approach is extremely important.
- (6) Environmental research, particularly with reference to pollution through industrial development and other causes, will assume great significance in the years ahead.
- (7) Drug research needs to be strengthened. Important fields of study will be quality testing, surveillance, indigenous medicine, cultivation of herbal gardens and alternative methods of transport, storing and administration of biologicals as well as the development of new ones, with special emphasis on costs.
- (8) Problems of rural water supply and sanitation (especially the disposal of night soil) should be highlighted and appropriate technologies which can be used within the available resources should be developed.
- (9) Studies on the different aspects of the health system are urgently needed. Very little work is being done, for instance, to study the relationship of health to society, and fields like sociology or economics of health are still in their early infancy. It is essential for the ICMR and ICSSR to develop a collaborative research programme in these important fields.

- (10) Elsewhere, we have also recommended emphasis on research into the indigenous systems of medicine and health consequences of industrial development (including studies of work place environment).

Appropriate Technologies

12.10 In the existing health system, there is an emphasis on over-sophistication which necessarily influences research. In the alternative model we have proposed, the emphasis is shifted to the utilisation of paramedical personnel and the development of alternative, simple easy-to-use technologies. The research programmes and policies should be suitably modified to meet this need. This does not imply a swing to the other extreme of under-sophistication. What is needed is a proper balance between the two approaches to meet real social needs.

Clinical and Basic Research

12.11 There is no dichotomy between basic and applied research. In fact, it has been the common experience that the development of a new theory often proves to be the best applied research. It would therefore be a short-sighted policy to ignore clinical and basic research which, in the last analysis, is needed for the success of applied research itself. It is, however, necessary, in view of the limitations on resources and personnel, to identify significant areas of clinical and basic research and to concentrate efforts on them. In particular, a great emphasis is needed on the new biology which holds great potential for health improvement. In the field of communicable diseases, for instance, several new challenges, especially of parasitic infection await solution. There is a state of technological despair in this regard. The existing technologies have become either increasingly ineffective or increasingly expensive. In the field of contraception, new approaches based on fundamental advances in reproductive biology are needed. There are, of course, the oncoming problems of heart disease and cancer. Their solution

awaits major advances in the understanding of molecular mechanisms in living processes. There is today a blooming of biology and a feeling of confidence that, in the long run, these problems are resolvable on the basis of modern biology. Solutions to many problems of tropical communicable diseases can only come from a deeper understanding of the metabolism of microbial agents and immune reactions against them. Advances in basic science are a sine-qua-non for the conquest of some of these intractable communicable diseases.

Improvement of Indigenous Capacity

12.12 In medical research, as in other research fields, certain common policies have to be adopted. There must be some deflation of 'prestigious' but less useful research which generally means work on problems which attracts attention abroad, gets ready publicity in foreign journals, and even outside financial support. But almost invariably, most of such research turns to be less relevant, if not wasteful, because our basic problems are very different from those of the developed countries. At a lower level, the general tendency to mechanical, imitative research also needs to be discouraged. On the other hand, every encouragement has to be given to the development of 'useful' research of the highest quality which implies an emphasis on the basic problems that plague our society. This type of research needs all support for the development of indigenous capability with a view to attaining self-reliance in the health field. The programme would be to attract the best brains to the field and to give them adequate facilities to pursue their basic interests. Indians have shown their basic eminence in many prestigious areas like nuclear or space sciences. Given needed assistance, they would be equally outstanding or even more so, in the less prestigious but infinitely more useful and rewarding field of improving the health status of the millions of poor in India.

V

Implementation

13

Administration, Finance and Implementation

13.01 In this Chapter, we shall discuss some of the issues relating to the creation of the alternative model of health care services which have not been discussed earlier.

Administration

Redefinition of Roles at the Central, State and Local Levels

13.02 In the existing health services, the pyramid of power is inverted, most of the power is vested at the top while the people become the dependent and neglected 'periphery'. The alternative model of health care services is based on an opposite assumption. The people are not the periphery but the nation; they should be, not dependent, but self-reliant; they should have the authority to decide the health care services they need and also to provide them; and the health needs of the people should not be neglected and, in fact, the larger part of the health care expenditure should be incurred in the community. Quite obviously, this radical change has far-reaching implications for the administration. Among these, mention has been made of the need for a total redefinition of the roles, responsibilities and functions of the health services at the Central, State and local

(district and below) levels. In so far as the roles, responsibilities and functions of the health care services at the village, sub-centre, community and district levels are concerned, these have already been discussed in detail in Chapter VII and need not be repeated here. Some explanation is, however, needed regarding the consequential changes at the national and State levels.

13.03 At the national level, the continuing concern will be with the overall planning of health services and the integration of these plans with those of overall development. It is the responsibility of the Government of India to provide stimulating leadership and the bulk of the financial support. The proposed Medical and Health Education Commission will be an important instrument for this purpose. The Centre will also ensure that the less advanced States are properly guided and assisted and that a minimum of health care services becomes available to the citizens, and especially to the poor and underprivileged groups, in all parts of the country. The Centre will also have large responsibilities for research, for coordination and maintenance of standards in teaching institutions, for control of communicable diseases, for the maintenance of national institutions of excellence, for the proper development of an information system, and for periodical evaluation. The central health administration will have to be reorganised to carry out these responsibilities effectively.

13.04 At the State level, the main change will be that the State Governments will be relieved of the taxing responsibility of providing day-to-day health services to the community. This is an immense advantage because they will now have adequate time to deal with the more important and broader questions of policy which can be dealt with at the state level alone and which tended to be neglected in the past. The concentration will now be on planning; ensuring equity of development in different districts; constant vigilance to see that the poor and the deprived do get adequate access to the health services and that the vested interests in the community which prevent this are curbed; management of state health cadres and state-level health institutions; providing guidance and expertise to local bodies or district-level authorities and to the community-based health

services; adequate provision of financial support; and periodical evaluation.

13.05 Following this change in the role and responsibilities of the State Governments, the character of the state-level administration of health services will also undergo a radical change. Their main responsibility now will be to assist the State Governments to discharge their onerous responsibilities in planning and financing of the health care services and in their evaluation and supervision. They will no longer be responsible for the day-to-day administration of health care and their main responsibility in this regard will be to provide technical guidance to the health services at the local levels. They will also have to deal with democratic bodies at these levels. The changes offer more exciting and more challenging opportunities to serve the people than the earlier centralized and bureaucratic set up. We hope that the state level health services will welcome these changes and rise to the immense new challenges they imply.

Voluntary Agencies

13.06 Voluntary agencies have a long tradition of providing valuable health services and are doing pioneer work in the health field; and as the philanthropic tradition is deeply rooted in the culture of the people, voluntary effort will always continue to be a valuable asset to society. We, therefore, recommend that the State should preserve and promote this tradition through appropriate policies in view, not of its size, but of its quality and significance. Voluntary agencies should, however, be required to work within the overall plans and policies of Government; and special assistance should be available to those agencies which are fighting at the frontiers and doing pioneer work of significance.

Readjustment Within the Health Services

13.07 The alternative model of health services will need a redefinition, not only in the roles of Centre, State and local

governments, but also of the roles, responsibilities and functions of the different cadres of health services and their mutual relationships. For instance, the health services will have to deal with the very large army of Community Health Volunteers (about two million) and about ten times that number of voluntary health leaders, who will be trained to participate in and assist the development of promotive and preventive health care services at the local level. The vast problems of their training, organisation and guidance will present unprecedented and stimulating challenges to the regular health services. Similarly, there will be a tremendous increase in the middle-level personnel of all categories; a massive improvement in the production and status of nurses is critical; a new and large integrated cadre of male and female Multipurpose Workers is emerging; and the roles and numbers of other paramedical personnel will also undergo radical changes. In fact, the ratio between the middle-level personnel and the top leadership which is now almost 1:1 may increase to 10:1 or so. At the top level, the doctors, specialists and superspecialists will still have a very important role. But they will not dominate the situation totally as they did in the past, and will have to share the leadership with other health functionaries at this level. The new policy has also created a great shortage of functionaries in several fields which were neglected in the past (e.g. epidemiologists, public health engineers and other public health specialists) and these will have to be made up very soon. It will thus be seen that the transition to the new model will pose three main challenges. Firstly, it throws the entire policy regarding manpower and training into flux and necessitates a continuous review of the changing position and prompt action. This should be a major responsibility of the Medical and Health Education Commission we have recommended elsewhere. Secondly, it poses vast problems of recruitment and training which will have to be dealt with carefully and competently. Our recommendations on the subject have been given earlier in Chapters VII and X. Finally, the emerging tensions between the different cadres will have to be resolved and their mutual relations placed on a proper footing to enable them to function as a team. This is essentially a task of leadership and will be the main responsibility at the State level. We

also trust that the services themselves will see the challenges and opportunities involved and adjust themselves to the new roles expected of them and function as a well-knit, homogenous and efficient team.

13.08 There are three aspects of the existing system of health care which will become far more significant in the alternative model, and especially because our total investments in health care will increase substantially, viz., referral services, information system and coordination. These deserve special attention.

Referral Services

13.09 The organisation of referral services will have to be streamlined and strengthened in the alternative model much more than at present. To begin with, the rural people in general and the poor and deprived social groups everywhere will have to be convinced, through personal or readily 'visible' concrete evidence, that they have a much better and more equitable access to the referral services in the alternative model than in the existing system. This will give them greater confidence in the new system and enhance its credibility. At present, many people by-pass the peripheral services and make direct approaches to the hospital which is thus converted into a sophisticated Primary Health Centre for the people in the neighbourhood. This trend should be discouraged and as has been stated earlier, a sub-centre meant for the people in the neighbourhood, should be attached to each large hospital. When this step will begin to yield results, the large hospitals can be better and more economically utilized for the more difficult referral cases for which they are essentially designed. The overall quality of the health services will also improve because hospitals will then begin to perform their proper function, viz. to support community-based comprehensive care. In the present pattern, hospitals are the central focus of health activity and primary care services serve mainly to provide them

with patients. The alternative model will help us to get away from this unhappy situation.

Information System

13.10 The main problems in the existing information system are: (i) there are so many useless forms and reports clogging the system that relevant information hardly reaches the point where it can be meaningfully used; (ii) the time lags in data collection and analysis are very large; and (iii) the relationship between the data collected and policy formulation, implementation and evaluation is very tenuous. All this will have to be changed. A selective process of abolishing most of the present forms and reports is the obvious way to start. No part of data-gathering should be retained or included unless there is clear evidence that it helps to improve the services. A streamlined national information system should then be set up and the local community should be involved in data collection. The data should be simple, reliable and honestly filled out. They should be collated and analysed for all the five levels of administration (village or sub-centre, community, district, State and nation) in formats appropriate for evaluation, policy formulation and action at each level. Such feed-back at lower levels will cease to be statistics; they get readily converted into people whom one knows and the delivery of health services becomes more prompt and effective. At higher levels, the data activate the "information-evaluation-better planning (or action)" loop and result in improved services or greater economies.

Coordination

13.11 Health is not a responsibility of the Health Ministry (or Departments) alone; it is a total societal responsibility of the Government and the people. Moreover, the action for health is more often needed in the non-health sectors (e.g. nutrition or

improvement of sanitation). Coordination of the health-supportive activities of all concerned official and non-official agencies is thus a very important need as well as instrument of raising health status. The Ministry of Health (or the State Health Departments) have not been known for their political weight or administrative stature and have not been able to discharge their responsibilities for coordination adequately in the past. In view of the great significance of health for human and national development, however, it is essential to make adequate arrangements for this coordinating role at all the important levels—national, State, district and community. No one method can or need be prescribed and each State can devise its own appropriate procedures for the purpose.

Finance

13.12 It is a pity that problems of the economics of health and financing of health care services have received little attention in this country. Very little meaningful data is available on the subject. There is hardly any analysis of issues like the different sources and objectives of the total expenditure on health, cost-effectiveness of different programmes, efficiency and waste in the system, and so on. A fairly large-scale and intensive programme of research on the subject needs to be developed on a priority basis. Perhaps, it would be desirable to set up special units for the study of this problem in two or three strong centres of economics research.

13.13 The main features of the existing situation regarding the financing of health services in India may be briefly stated. Social services, as a rule, receive stepmotherly treatment in our system. Even among them, health has a far lower priority and the total public expenditure on health services of all types is even less than half that on education. The present total expenditure on health (private and public) is about two per cent of the GNP only. Within health, the large bulk of our expenditure is incurred on curative services, or within urban areas, and the largest

beneficiaries of it are the top 20 or 30 per cent of society. The waste and inefficiency of the system is colossal and almost criminal in a poor country so directly in need of good health services. The alternative model moves in the opposite direction and tries to alter this sad state of affairs radically. It assumes that the priority given to health in our system would be very high—equal to that of education—and that each of these social services should ultimately get about 6 per cent of the GNP. This will mean that the total expenditure on health will rise by A.D. 2000 to about six times that at present (at constant prices) on the assumption that the GNP per head would also be doubled by then. The bulk of this expenditure would be in the public sector and on promotive and preventive aspects, in rural areas or within the community, and its benefits will go directly to the people, and particularly to the poor and underprivileged. It also proposes to make the system more economic and efficient. It is therefore obvious that the financial basis of the health care services will have to be radically restructured to suit the needs of the alternative model. The main changes needed will include:

- a substantial increase in the total public expenditure on health at about 8 or 9 per cent per year (at constant prices) over the next 20 years;
- investment of the vast bulk of available additional funds in promotive and preventive aspects and holding down the expenditure on curative aspects to the genuine real needs so that, over time, the bulk of the health expenditure is devoted to promotive and preventive aspects;
- increasing the expenditure on health services within the community very substantially and keeping down that on urban hospitals and specialities and superspecialities, so that, over time, the people who now occupy a peripheral position, will get the bulk of the expenditure on health care services;
- increasing the expenditure in rural areas and in programmes whose benefits go directly to the poor and underprivileged groups; and
- improving the efficiency of the system by moving away

from the existing borrowed model and creating another model more suited to the life and needs of the people, by vesting control in the beneficiaries of the system, and by continuous monitoring and evaluation.

13.14 When any radical changes of these types are to be brought about, both positive and negative decisions are needed. It is the general experience, particularly in 'soft' politics, that the positive decisions are more readily taken because they express a desire to do something good and have no connotation of harming any vested interests. If somebody is going to benefit without harming any, one else, who will object and why? On the other hand, a negative decision is rarely taken because this needs great political courage and strength. When taken, its form shows that it definitely harms some vested interest without indicating specifically who will benefit therefrom. The interests adversely affected raise a howl against the proposal which no one is particularly interested in defending and it soon gets thrown out. What is not realised, however, is that the positive decision remains unimplemented on paper unless it is accompanied by a corresponding negative decision which destroys an evil and makes it possible for a good thing to grow. If one desires to grow a good harvest, for instance, it is not enough to sow seeds; it is even more important to decide that all weeds shall be rooted out.

13.15 This is very relevant to the discussion under issue, viz. a radical change in the existing pattern of expenditure on health care services and its priorities. If this change is to be brought about, both positive and negative decisions are needed and they will have to go together. For instance,

- (1) A decision to give a promotive and preventive orientation to the health care services is not possible unless, from a financial angle, the easy positive decision to invest more funds in these services is taken simultaneously with the hard negative decision that the expenditure on large urban hospitals and on the specialities and superspecialities should not be increased without a very close scrutiny of its essentiality and priority.

(2) A decision to give a promotive and preventive orientation to the health care services is also not possible, from the personal angle, unless the easy positive decision of creating the cadres of CHVs or MPWs or other needed public health functionaries is taken side-by-side with the hard negative decisions to redefine the role of the doctor, change his training, and above all, stop all over-production by refusing to establish new medical colleges or increasing the capacity of existing colleges or creating a new cadre of 'quick' doctors.

(3) A change in the existing pattern of drug production in the country to suit the disease pattern and particularly, to meet the needs of the poor and underprivileged groups, is not possible unless the easy positive decision to produce the basic drugs is taken side-by-side with the hard negative decision to restrict overall drug production and even to ban the production of profit-making, costly but useless or even harmful drugs.

It is easy, but not necessary, to multiply such instances. What we desire to highlight is the need to take and implement hard, unpopular, negative decisions if our objective of implementing the positive decisions is to be realized in practice.

13.16 In the present system, resources, authority and responsibility are all concentrated at the top. A common experience in implementing plans based on decentralization in such a situation is that responsibilities are decentralized to lower levels with alacrity while there is a great hesitation to make a corresponding devolution of resources and authority. Consequently, there is a mismatch between responsibility, authority and resources at every level and this is generally the largest at the lowest level where one finds the heaviest responsibility matched with little authority and even less resources. This error will have to be avoided and care will have to be taken to see that adequate resources are transferred to every level and that each level has adequate resources and authority to enable it to discharge its responsibilities.

13.17 The total expenditure needed for health services is very large and the vast bulk of it will have to come from Central

and State taxes. It would, however, be desirable to levy a local health cess and make the community pay a share of the total cost, however small. As suggested earlier in Chapter 11, we could move in the direction of a system where a patient ordinarily pays for the cost of drugs, except for a rather small percentage of patients who are defined by local community representatives as being so poor that they deserve free medicines also.

A National Health Service

13.18 The alternative model proposed here is a very major step in the eventual creation of a national health service. It tries to ensure that by A.D. 2000, morbidity will be considerably reduced through better nutrition, improvement of environment and health education and that all citizens shall receive adequate primary health care and equitable access to a prompt and efficient system of referral services. In particular, the model provides that special attention will be given to the needs of the poor and underprivileged groups. What is even more important, it refuses to create dependency among the people and strives to build their capability to understand and solve their own health problems. All the same, it is necessary to point out that the alternative model is not a programme of national health service. We do not think that the time is ripe for such a measure. If introduced in haste, without adequate preparation, and in the absence of the social ethos necessary for its success, it is likely to do more harm than good. We do not also think that one can abolish the private sector in health alone. It will involve the abolition of the private sector in all important walks of life, including the abolition of the mixed economy. Our proposals, therefore, have a limited approach: they aim to provide good and adequate health services to the poor and the underprivileged sectors of the population who get little benefit from the existing services, either free of charge, or for payment of the cost of drugs (which is, anyway, a very small portion of the total cost). Our aim also is to improve the quality of these services so that there will be

less and less need for citizens to go to the private practitioner. If this process is carried on far enough, the domain of private practice will get considerably reduced. The problem of creating a national health service and abolishing private practice altogether may be reviewed then, say about ten years from now.

13.19 We also believe that there will have to be some restriction on private practice. No private practice should be permitted to employees of the public health services. There should be adequate control on private practitioners also to see that they do not indulge in malpractices.

Conditions Essential for Success

13.20 What are the conditions essential for the success of the alternative model? Since good health and good societies go together, health is a function of social, economic, cultural and political factors and action to raise the health status of the people will have to be taken on several fronts, both within and without the health sector.

Action Outside the Health Sector

13.21 The intensive efforts of the State and the people should be directed at bringing about the socio-economic-political transformation visualised in the Constitution. The development of good health care services will succeed in proportion to the extent to which these basic attempts to eradicate poverty, inequality and ignorance make headway.

13.22 The basic objective of this proposal is to improve the health status of women and children and of the poor and underprivileged social groups like Scheduled Castes, Scheduled Tribes, landless agricultural labourers in rural areas and the lumpen proletariat of the urban slums. This cannot be done unless their overall status is improved. This is basically a

political issue and implies the need to take them out of the present marginalised existence and vest them with effective political power. This can only be done through organisation and political education. The health programme (like programmes in other fields) can be a great instrument for this just as the political awakening and organisation of the poor and the underprivileged can be a sure path to an improvement in their social and health status. This is what the country has failed to do in the last 30 years, and this is what its young men and women will have to concentrate on during the next two decades. This alone will create the foundation on which a good and equitable programme of health services can be built.

Action Within the Health Sector

13.23 This action outside the health sector is necessary but not sufficient. The socialist countries have taken these measures and that explains the great and rapid advance of their health care systems. But even these countries are paying a heavy price because of the continuance of the consumer-oriented over-professionalized and dependency creating model of health care services and because of a false value system regarding pain, ageing and death. It is therefore necessary for us to abandon the Western model of health care services which was initially imposed on us, but which we have continued uncritically to retain and expand and it will have to be replaced by the alternative model of community-based health services we have proposed. This programme will need financial investments no doubt. But money alone will achieve very little. The programme will succeed only if better human inputs are made, among which the following three may be highlighted:

(1) The alternative model is *not* to be imposed upon the people. Such a step will not be justified even on the grounds that it is in the interest of the people. What is necessary is that the people are educated to realise the weaknesses of the existing model and are convinced, as a result of rational discussion, that the alternative model will give them better

health services at lesser cost. It is only this realisation and conviction that will secure the full co-operation of the people without which its effective implementation is not possible. It is, therefore, necessary to publish this report in all the Indian languages and take the discussion of the basic issues it raises to all the people. The mass media, the press, and official and non-official agencies should play a major role in this essentially educational campaign and create the necessary intellectual and social climate for the acceptance and implementation of the Report.

(2) The present model of health services is centralized and bureaucratic. This creates a certain set of attitudes, both in the services and in the people. For instance, the services develop an authoritarian and paternalistic attitude towards the people who, in their turn, become dependent. The alternative model which is decentralized and participatory will require a very different set of attitudes. The bureaucrats and the professionals will have to cultivate respect for the people and a faith in their ability to identify and find solutions to their problems. This alone will give them the courage to allow the community 'the right to sin'. They have also to realise that their responsibility is not to provide the services, but to build a capability among the people to provide the services to themselves; and that the measure of their true success is not to do things for the people, but to enable the people to look after themselves. On their part, the people will have to develop self-confidence and abandon the *ma-bap* attitude towards the services. They will also have learn to organise themselves, not on the basis of the law of the jungle where everyone tries to get away with whatever he can and exploitation and competition reign supreme, but on the basis of a community based on principles of mutual respect, tolerance and goodwill, cooperation and sympathy for the underdog. It must be realised that these changes in attitudes and value will be the result of the successful operation of the alternative model, just as it is the deliberate cultivation of these attitudes and values that will itself make a major contribution to the success of the model.

(3) Finally, the success of the alternative model will depend largely upon the quality of the health services. This will, of course, include the usual problems of proper selection, training, creation of proper conditions of work and service, adequate supervision and guidance and good administration which will ensure justice and fair play and relate rewards visibly to quality and punishment to failure. But this is not sufficient. Health care differs from other societal activities in the greater expectations of the public that in addition to technical competence, personnel should have an abiding spirit of social services and should bring concern and humanity to bear on their activities. Unfortunately, the current trends in this regard are far from happy. The impersonal callousness which is bred in large hospitals is spreading and the system is getting dehumanised and even mercenary and corrupt. The public dissatisfaction against these trends is manifest and growing. But only a few citizens can resort to private practice; and the only way out is to reverse these trends and reinfect the health services with a spirit of service. This is partly a responsibility of the training process. Moreover, the doctor as the leader of the team can play an important role and influence the values and quality of caring among the whole staff if he shows these concerns himself. Ways should be found to discover and reward such leadership. This also highlights the need to vest the control of its health services in the community itself. Just as doctors in private practice have to behave courteously and show concern in order to satisfy their patients, the quality of care will be improved by making personnel responsible to local users of each facility.

14

Issues and Conclusions

14.01 We are optimistic about the possibilities of bringing better health to the people of India. A new partnership between the health system and the people can release their tremendous capacity to solve their own problems. The remarkable scientific advances of recent years can be adapted specifically to meet the needs of the poor and deprived rather than being focussed mainly on sophisticated care for the elite. Abundant demonstrations have shown what needs to be done to produce dramatic changes in the health and welfare of those in greatest need, especially women and children. We are, therefore, convinced that the goal of health for all by A.D. 2000 is realistic and practicable. The plan we have presented here is expected to help the country to achieve this goal through vigorous and sustained action. Its principal message is that this goal cannot be achieved by a linear expansion of the existing system and even by tinkering with it through minor reforms. Nothing short of a radical change is called for; and for this it is necessary to develop a comprehensive national policy on health and to create an alternative model of health care services.

14.02 The basic challenges presented in this plan are to initiate an integrated plan of health, development and family planning, based on a hopeful vision of what can be achieved by the year 2000. It necessarily implies the adoption of several alternative policies which have been broadly outlined in this Report. No twenty-year perspective should try to provide detailed prescriptions for implementation. That is essentially a task for the five

year and annual plans, and in a vast and plural country like India, for each State Government and district authority to decide in the light of the national policies laid down by the Government of India. What this plan provides—and that is all what a plan of this type can ever hope to provide—is a frank analysis of the existing health situation, highlighting the gap between even minimal aspirations and the actuality, a comprehensive conceptualisation of where the country might be at the end of this century if this challenge is taken seriously, critical analysis of constraints and major policy options, a discussion of interlinkages and priorities, and an indication of the best strategy available to realise our objectives, with some idea of its administrative and financial implications. These are presented here in a format designed to be used by all those who will be most concerned with these issues, including leaders of public opinion. The various Chapters of this Report present the rationale and justification for the new directions proposed in the different health sectors and a fairly detailed indication of the changes needed in programmes and strategies. In this concluding Chapter, we shall bring together our major conclusions and recommendations to facilitate the consideration of this document and to expedite action thereon.

Health for All by A.D. 2000

Targets

14.03 What does this goal of health for all by A.D. 2000 mean in precise terms? We have suggested that this should mean the provision of good and adequate health care for all citizens—and especially for the poor and underprivileged groups. In our opinion, this will imply a tremendous reduction in morbidity and mortality resulting in a fall of the total death rate from 15 to 9 and in the birth rate from 33 to 21. This will also imply that the net reproduction rate (which is now 1.67) will be reduced to one, that infant mortality would be reduced from 120 to 60, that the average family size from 4.3 children to 2.3 children,

and that the total population of India may stabilise at about 1,200 million by about 2050. This would indeed be a great breakthrough, not only in health, but also in development and family planning. We consider these targets as realistic and practicable (Para 2.18).

14.04 If this goal is to be realised, a major programme for the development of health care services is of course *necessary*, but it is not *sufficient*. Health is a function, not only of medical care but of the overall integrated development of society—cultural, economic, educational, social and political. In fact, as we said earlier, good health and good societies go together. Health also depends on a number of supportive services—nutrition, improvement in the environment and education; and the influence of these services on health status is far greater than that of medical care. The major programmes which will improve health are thus outside the realm of health care proper. These were comparatively neglected in the last 30 years and that is one of the major reasons why the country has obtained such meagre results for its large investments in health. This error should not be repeated, and during the next two decades, the three programmes of (1) integrated overall development, (2) improvement in nutrition, environment and health education, and (3) the provision of adequate health care services for all and especially for the poor and underprivileged, will have to be pursued side-by-side.

Integrated Development

14.05 Poverty, inequality and ignorance are the greatest illnesses of the Indian society. The status of its women and children is low: they are both cheap and expendable. Health for all is an essentially egalitarian goal and it cannot be achieved in a society of this type (Para 2.13). The integrated programme of development to be pursued over the next 20 years should therefore be basically aimed at reducing poverty and inequality, spreading education, and improving the status of women and children as well as of the poor and deprived social groups. This will include the following:

- (1) Rapid economic growth with the object of doubling the national income per capita (at constant prices) by A.D. 2000 (Para 2.14);
- (2) Full-scale employment, including a guarantee of work on reasonable wages to every adult who offers to work for 8 hours a day (Para 2.14). Creation of adequate opportunities of gainful employment to women, with an emphasis on equity of remuneration and reservations to make up for past neglect, so that women become 'visible' assets to their families (Para 8.07);
- (3) Improvement in the status of women with a determination to check the adverse sex-ratio and to make it rise substantially upwards, say to 972, the level it was in 1901 (Para 8.05);
- (4) Adult education with emphasis on health education and vocational skills, the targets being to cover the entire illiterate population in the age-group 15-35 by 1991 and liquidation of illiteracy by A.D. 2000 (Para 2.14);
- (5) Universal elementary education for all children (age-group 6-14) to be provided by 1991 (Para 2.14);
- (6) Welfare of Scheduled Castes and Scheduled Tribes (Para 2.14);
- (7) Development of an intensive and integrated programme of family planning (Paras 2.17-2.25);
- (8) Creation of a democratic, decentralised and participating form of government (Para 2.16);
- (9) Rural electrification (Para 2.14); and
- (10) Improvement in housing, with emphasis on the provision of houses for the landless and slum clearance (Para 2.14).

We have recommended that the details of these programmes should be worked out and that they be implemented fully over the next 20 years.

Family Planning

14.06 Family Planning should become a people's movement.

This process would be facilitated by the efforts at integrated development and the education and organisation of the poor and underprivileged groups. It is desirable that there should be a National Population Commission set up by an Act of Parliament to formulate and implement an overall population policy. The objective should be to reduce the net reproduction rate from 1.67 to 1.00 and the birth rate from 33 to 21. This will imply effective protection of 60 per cent of eligible couples (against 22 per cent at present). While the emphasis on terminal methods should continue, there should be far greater use of other methods as well. The accent should be on education and motivation, especially through inter-personal communication and group action. Incentives, especially those of a compensatory character, should be used. There should be concentrated effort to work with women as well as men. While the health care services have a role to play in motivation also, their main responsibility is to supply the needed services, and to undertake follow-up care. The alternative model of health care services has been designed to meet these challenges fully and squarely (Paras 2.17-2.25).

Nutrition

14.07 Among other supportive programmes, nutrition deserves priority because it is a major foundation of health. For this purpose, it is necessary to grow adequate food, to reduce post-harvest losses, to create an adequate system of storage and distribution, and to increase the purchasing power of the people by creating employment for men, and especially for women (Para 3.10). It will also be necessary to give special attention to improving the nutritional status of women and children. Breast feeding should be encouraged and women trained and assisted to take better care of children through weaning at the right time and through a more efficient management of the child's diet in the immediate post-weaning period. Pregnant and lactating mothers should be given the special protection they need (Paras 3.11-3.19). Special programmes should be developed for specific nutritional disorders like iron-deficiency anemia, or

Vitamin A and iodine deficiencies (Para 3.20). In addition, supplementary feeding programmes may have to be organised for carefully identified target groups at risk (Para 3.21).

Improvement of the Environment

14.08 The second supportive service is improvement of the environment. It will reduce infection and make programmes of nutrition itself more effective. Several programmes will have to be developed from this point of view. Safe drinking water supply should be provided to all urban and rural areas (Paras 4.02-4.04) at an average annual estimated cost of Rs. 7,500 million. In urban areas, the sewage disposal system will have to be improved by eliminating the bucket service system in ten years (Para 4.07), providing water-seal latrines to all households who have no facilities at present, during the same period (Para 4.08), and ultimately, installing good sewage disposal systems with essential purification works in all urban areas by A.D. 2000 (Para 4.09). The estimated costs of this programme will work out to Rs. 1,125 million per year. A massive programme of proper collection and disposal of solid wastes and their conversion into compost will have to be developed in all areas, the estimated cost being Rs. 4,000 million a year on an average (Para 4.10). In rural areas, an intensive programme of improving sanitation, with special emphasis on proper disposal of night soil, will have to be developed at an estimated cost of Rs. 5,000 million a year (Para 4.13). Greater attention will have to be paid to town and village planning (with special emphasis on removing the segregation of the Scheduled Castes), and large-scale programmes of housing for the rural poor and clearance of urban slums will have to be undertaken, with emphasis on the development of a low-cost building technology (Paras 4.14-4.16). Urgent steps have to be taken to prevent water and air pollution, to control the ill-effects of industrialization and to provide better work-place environment (Paras 4.17-4.22).

Health Education

14.09 The third supportive service is health education. It gives

information, teaches skills and cultivates attitudes and values which help an individual to be healthy. Health education is not also a one-shot affair: an individual will need it throughout his life. The best way to universalize health education therefore is to make it an integral part of general education which, in its turn, will have to be life-long (Para 5.03). In early childhood (0-5 years), it is primarily the responsibility of the mother to give it to her child and she must be trained to do so (Para 5.04). For older children (6-14 years), health education should be an integral part of general elementary education which should be universal (Para 5.05). Health education suited to adolescents and youths should be an integral part of secondary and university education also (Para 5.06). What is extremely important, health education should be an integral part of adult education (Para 5.07).

14.10 The health personnel have three major responsibilities for health education. They should assist the general education system to provide health education by devising suitable programmes, training of teachers, production of materials and conduct of experiments (Para 5.09). They have also an educational role with regard to every patient because all proper medical treatment often includes an element of health education (Para 5.11). Finally, they have a very important role in which they try to give health education to the poor and underprivileged groups who need it most (Paras 5.12-5.16). The Central and State Health Bureaux should be reorganised and strengthened to help the health personnel to discharge these responsibilities (Paras 5.17-5.19). The mass media should be harnessed fully for purposes of health education (Para 5.21).

The Alternative Model of Health Services

14.11 This brings us finally to the central problem of the action required within the health field itself to reach the goal of health for all by A.D. 2000. As stated earlier, no meaningful results can be obtained by a linear expansion of the existing health services or by tinkering with them through minor reforms. We have, therefore, proposed that this model should be totally

abandoned and a new alternative model should be created in its place. This is described in detail in Chapter 7.

14.12 This new model differs from the existing model in several important respects. It abandons the top-down and elite oriented approach of the existing services and is based or rooted in the community (which means a population of 1,00,000 which will have a Community Health Centre, a sub-centre for every 5,000 population and a village/neighbourhood centre for every 1,000 population) and then rises to specialised referral services at the district and regional levels (Paras 6.03-6.05). It gives up the over-emphasis which the present system places on large, urban hospitals and creates a small community hospital of about 30 beds in each community to meet the vast bulk of its referral needs (Paras 6.06-6.12). It moves away from the predominantly curative orientation of the existing services and integrates promotive, preventive and curative aspects at all levels (Paras 6.13-6.15). It redefines the role of drugs and doctors so that they remain the best agents of health care and do not develop a vested interest in ill-health (Paras 6.16-6.18). It gives up the centralized and bureaucratic character of the present system and adopts a decentralized, democratic and participatory approach which will involve the community intimately in planning, providing and maintaining the health services it needs (Paras 6.19-6.23). It strives to integrate the valuable elements in our culture and tradition (e.g. the *ashrama* concept of stages in life—non-consumerist attitudes, sense of individual and community responsibility, yoga and simplicity and self-discipline as the core of a life-style). It also strives to create a national system of medicine by giving support to and synthesizing the indigenous systems (Paras 6.24-6.26). Finally, it abandons the over-expensive model of the health care systems in the developed countries and creates an economic model which will provide a better quality of health service at a much smaller cost which will be within the reach of the country (Paras 6.27-6.30). It is our considered view that health should have the same priority as education and that both should receive about 6 per cent of the national income by A.D. 2000. This would provide all the funds needed to implement this model and to develop its essential support services (Para 6.32). It is our recommendation that this model should be

fully created, in a phased and planned manner, by A.D. 2000.

MCH Services

14.13 In this new model, special efforts will have to be made to expand and improve MCH services which are now patchy and rudimentary (Para 8.05). There should be an attempt to cover all women and children with basic services with special attention to those at risk (Para 8.09). The *dais* should be trained and fully utilized, along with CHVs, at the village centre level with strong referral support from the MPWs (Para 8.10). These services will be largely domiciliary (Para 8.11). A detailed programme should be drawn up of the different services that will be provided at the village, sub-centre and community levels (Para 8.12), and priorities in MCH activities should be clearly laid down (Para 8.13). The MCH staff at each level should be adequate and should receive job specific training (Para 8.15). Health education of the mothers should be an important component of MCH services (Para 8.16) and care should be taken to see that these services retain their essential character as services for women and children even while laying adequate emphasis on family planning (Para 8.17).

Communicable Diseases

14.14 The communicable diseases still form the largest cause of morbidity and mortality and the fight against them will have to be continued with still greater vigour in the years ahead. The existing programmes against malaria (Paras 9.11-9.12), tuberculosis (Para 9.08-9.10), leprosy (Para 9.15-9.17), filariasis (Paras 9.19-9.22), poliomyelitis (Para 9.19) and Japanese encephalitis (Para 9.24) will have to be strengthened, broadly on the lines indicated. Diarrhoeal diseases, especially those of children, need special emphasis (Paras 9.06-9.07). To develop these programmes on proper lines, it is necessary to develop a good surveillance system and a coordinated effort of all research institutes and the administration (Paras 9.26 - 9.27). By A.D. 2000, our object

should be to eradicate (or at least effectively control) diarrhoeal diseases, tetanus, diphtheria, hydrophobia, poliomyelitis, tuberculosis, guineaworm, malaria, filariasis and leprosy (Para 9.28).

Rehabilitation Services

14.15 There are an estimated 60 million physically handicapped in the country. Every year, 5 million more are added. Despite this the rehabilitation services are poor and inadequate. Rehabilitation services should be integrated with other community health services. Rehabilitation workers should also be drawn from the community and health education will include rehabilitation education. New technologies suited to our life should be evolved, using local materials and artisans (Paras 7.51-7.52).

Personnel and Training

14.16 Under the new alternative model, the organisation of the health services will be radically different from that in the existing system. A new personnel and training policy will, therefore, have to be adopted on the broad lines indicated (Para 10.05). A new category of personnel, the CHVs, will be introduced and will be the main bridge between the community and the services (Para 10.06). The middle level personnel will increase very substantially. This will include health assistants, MPWs (Para 10.07), nursing personnel whose numbers will be much larger and whose status will need considerable improvement (Para 10.08), and paramedicals (Para 10.10). Very important questions about doctors will have to be sorted out: these relate to their numbers, training, remuneration and social conditions, value system and proper development of postgraduate courses (Para 10.11). The training and utilization of specialists (Para 10.12) and superspecialists (Para 10.13) will have to be reorganised from the point of view of effective utilization. Facilities for training in public health should be increased (Para 10.14). There should be adequate arrangements for the

continuous in-service education of all categories of health personnel (Para 10.15). The Government of India should establish, under an Act of Parliament, a Medical and Health Education Commission, with comprehensive terms of reference. A continuing study of personnel and training and taking effective action thereon should be a major responsibility of this Commission (Para 10.16).

Drugs and Pharmaceuticals

14.17 There is need for a clear-cut drug policy and a National Drug Agency to implement it properly (Para 11.23). The pattern of drug production in the country should be modified to suit the disease pattern. The drugs required by the poor people should be produced in adequate quantities and made available at the cheapest prices possible. This applies specially to the few simple drugs required at the community level. It is also necessary to compile a list of other essential drugs. The quantities needed of all essential drugs should be calculated and steps taken to see that they are produced (Paras 11.05-11.08). The production of high price and useless drugs needs to be controlled (Para 11.09), the tendency of the profession to over-prescribe should be curbed (Para 11.10). The production of basic drugs has to be made more self-sufficient and in this, the small-scale sector needs to be encouraged subject to strict quality control (Para 11.12). The dominance of the foreign sector should be reduced still further (Para 11.15). Price control should be more effective; the cost on packaging and overheads should be reduced; the introduction of new drugs should be strictly controlled and proliferation of drugs by minor variations should not be allowed; the prices of essential drugs should be kept to the minimum, a higher mark-up being allowed, if necessary, in other drugs; and all essential drugs should be sold only under generic names (Para 11.19). There should be adequate arrangements for quality control of all drugs, including indigenous medicines (Para 11.20) and R & D in drugs needs to be greatly encouraged (Para 11.21). There is considerable imbalance in the consumption of drugs in urban and rural sectors of

the health system which needs to be corrected and it may be desirable to move towards a system when the patient pays for the cost of drugs (Para 11.22).

Research

14.18 The main problems in research are selection of priority areas, quality and utilization of research, improvement in research capability, and attainment of indigenous self-reliance (Para 12.08). The priority areas obviously are: primary health care, epidemiology, communicable diseases (with special emphasis on diarrhoea), environmental research, and research on drugs and problems of rural water supply and sanitation. It is also necessary to promote research on social aspects of medicine jointly under the ICMR and ICSSR, especially on the economics of health and financing of health services. Other important areas are indigenous medicine, health implications of industrial development, and family planning (Paras 12.09 and 2.25). Considerable attention has to be given to the development of appropriate technology (Para 12.10). Side-by-side, there should be an emphasis on the development of clinical and basic research, particularly in the field of biology, and a determined bid to build up high level indigenous research capability with a view to attaining self-reliance (Paras 12.11-12.12).

Administration, Finance and Implementation

14.19 The introduction of the alternative model has large administrative and financial implications. From the administrative point of view, it is necessary to redefine the roles of the Central and State Governments in view of the large powers delegated to the local bodies at the district level and below (13.02-13.05). Voluntary agencies will have to function within the overall policy laid down by the State. But they should receive encouragement and aid, especially when fighting at the frontiers and doing pioneer work (Para 13.06). There will be considerable tensions within the new health care services and need for redefinition of roles and mutual adjustment. This is

the responsibility of the administration to secure through good leadership and proper training (Para 13.07). The referral services should be strengthened and streamlined (Para 13.09); a new and efficient national information system should be created (Para 13.10); and adequate arrangements made for more effective coordination at all levels (Para 13.11).

14.20 On the financial front, the total investment in health services will have to be substantially stepped up and the health expenditure will have to rise by about 8 to 9 per cent per year (at constant prices). The existing priorities will have to be radically altered and the bulk of the additional resources will have to go into promotive and preventive activities, in rural areas in the development of supportive services like nutrition, sanitation, water supply and education, and for providing health care services to women and children and the poor and underprivileged groups. This will need taking of both positive and negative decisions. There should be adequate grants to local bodies and communities to enable them to discharge their responsibilities; and while the basic responsibility of financing health will continue to rest with the Centre and States, an effort should be made to tap local taxes and individual payments to cover drug costs (Paras 13.12-13.17).

14.21 The alternative model proposed here is a large step in the creation of a national health service, but it does not create it. In our opinion, the time is not ripe for the purpose and the issue may be examined in due course, say, ten years from now. There is, however, need to control private practice and it should not be allowed to employees in the public health care system (Paras 13.18-13.19).

Conditions Essential for Success

14.22 This, in brief is the plan we have proposed, for realising the goal of health for all by A.D. 2000. There can be no two opinions about its desirability, and what we have outlined is enough to show that the goal is realistic and feasible.

14.23 As we said at the opening of our Report, the country dedicated itself, when it adopted the Constitution in 1950, to create a new social order based on equality, freedom, justice and dignity of the individual and to eliminate poverty, ignorance and ill-health. This 'mid-term' review after three decades shows that, in so far as health is concerned, the country is still far short of its objective in spite of major advances in several areas. It also shows that an attempt to eradicate ill-health will not succeed in isolation and that it can be pursued side-by-side with the other two interdependent and mutually supportive objectives of eliminating poverty, inequality and ignorance, and against the back-drop of a socio-economic transformation which will give effective political power to the poor and deprived social groups. It is, therefore, necessary that the country rededicates itself to this task and strives to achieve its goals by A.D. 2000. Succeeding generations will never forgive us if we fail to do so.

14.24 The attainment of this goal depends, above all, on three things: (1) the extent to which it is possible to reduce poverty and inequality and to spread education; (2) the extent to which it will be possible to organise the poor and underprivileged groups so that they are able to fight for their basic rights; and (3) the extent to which we are able to move away from the counter-productive, consumerist Western model of health care and to replace it by the alternative model based in the community which is proposed here. These are our tasks and it needs millions of young men and women, both within and without the health sector, to work for them. If a mass movement for this purpose can be organised and the people rededicate themselves to the realisation of their national goals, the country will be able to keep its tryst with destiny at least by A.D. 2000, if not earlier.

VI

Appendices

Appendix One

Abbreviations Used

ANM	:	Auxiliary Nurse Midwife
CHC	:	Community Health Centre
CHV	:	Community Health Volunteer
DHC	:	District Health Centre
HA	:	Health Assistant
ICDS	:	Integrated Child Development Services
ICMR	:	Indian Council of Medical Research
ICSSR	:	Indian Council of Social Science Research
MCH	:	Maternal and Child Health
MPW	:	Multipurpose Worker
PHC	:	Primary Health Centre

Appendix Two

Statistical Tables

- I : Birth and Death Rates
- II : Average Expectation of Life at Birth
- III A : Infant Mortality
- III B : Neonatal Mortality, Mortality for 1-6 Months, 6-12 Months and Respective Ratios for 1,000 Live Births
- IV : Maternal Mortality
- V : Population
- VI : Outlays on the Health Sector
- VII : Health Care Services in India—Plans and Priorities
- VIII : Per Capita Government Expenditure on Health
- IX : Hospitals and Primary Health Centres
- X : Health Facilities
- XI : Health Personnel

Table I: Birth and Death Rates

Period	Crude birth rate	Crude death rate
1901 — 1911	49.2	42.6
1911 — 1921	48.1	47.2
1921 — 1931	46.4	26.3
1931 — 1941	45.2	31.2
1941 — 1951	39.9	27.4
1951 — 1961	41.7	22.8
1961 — 1971	41.1	18.9
1980	33.0	15.0
(Estimated)		

SOURCE: *Pocket Book of Health Statistics of India, 1976*. Central Bureau of Health Intelligence, Directorate General of Health Services, Ministry of Health and Family Planning, Government of India, New Delhi.

Table II: Average Expectation of Life at Birth (Years)

Period	Male	Female
1901 — 1911	22.6	23.3
1911 — 1921	19.4	20.9
1921 — 1931	26.9	26.6
1931 — 1941	32.1	31.4
1941 — 1951	32.4	31.7
1951 — 1961	41.9	40.6
1961 — 1971	46.4	44.7
1980	52.6	51.6
(Estimated)		

SOURCE: *Pocket Book of Health Statistics of India, 1976*. Central Bureau of Health Intelligence, Directorate of Health Services, Ministry of Health and Family Planning, Government of India, New Delhi.

Table III.A: Infant Mortality

Period	Infant mortality rate per 1,000 live births	Period	Infant mortality rate per 1,000 live births
1911 — 1915	204	1936 — 1940	161
1916 — 1920	219	1941 — 1945	134
1921 — 1925	174	1946 — 1950	146
		(Actuarial report)	
1926 — 1930	178	1951 — 1961	146
		(Rural India)	
1931 — 1935	174	1976	129

SOURCE: Same as for Table I. Based on Sample Registration Scheme.

Table III.B: Neonatal Mortality, Mortality for 1-6 Months, 6-12 Months and Respective Ratios for 1,000 Live Births

	1921	1931	1939	1968*	1969*
Deaths under one month:					
Percentage of total infant mortality	44.2	48.1	47.3	54.1	53.5
Deaths under one month:					
Ratio per 1,000 live births	87	86	74	74	74.8
Deaths (1-6 months):					
Percentage of total infant mortality	29.2	29.0	30.3	28.5	30.5
Deaths (1-6 months): Ratio per 1,000 live births	58	52	47	39	42.7
Deaths (6-12 months):					
Percentage of total infant mortality	26.6	23.0	22.4	17.4	16.0
Deaths (6-12 months): Ratio per 1,000 live births	55	41	35	23.8	22.4

SOURCES: 1. These data were collected for us by the Institute for Research in Medical Statistics, New Delhi.
2. S. Chandrashekhar's book on *Infant Mortality for Rural Areas of the Country*.

Table IV: Maternal Mortality Rate per 100,000 Live Births (1972)

Cause of death	Mortality rate
Abortion	56.2
Eclampsia	46.2
Placenta praevia	30.1
Haemorrhage in delivery	30.1
Post-partum haemorrhage	36.1
Anemia of pregnancy	50.2
Abnormal presentation	28.1
Puerperal sepsis	56.2
Not classifiable as above	84.3
All causes	17.6

SOURCE: Model Registration Survey of Causes of Death-1972, Registrar General, India, *Pocket Book of Health Statistics of India, 1976*.

Table V: Population

Year	Male	Females (In millions)	Total	Sex ratio (Females per 1,000 males)	Decade variation (Per cent)
1901	120.76	117.33	238.09	972	—
1911	128.34	123.67	252.01	964	5.73
1921	128.50	122.73	251.23	955	- 0.30
1931	142.87	135.73	278.60	950	11.00
1941	163.62	154.63	318.25	945	14.23
1951	185.46	175.49	360.95	946	13.31
1961	226.21	212.86	439.07	941	21.64
1971	283.94	264.01	547.95	930	24.80
1981*	347.63	324.38	672.01		
1991	412.44	386.52	798.96		

Note: We have assumed a population of 950 million by A.D. 2001.

* Estimated

- SOURCES: 1. *Population Statistics of India, 1971*, Registrar General of India.
2. *Pocket Book of Health Statistics of India, 1979*, Central Bureau of Health Intelligence, Directorate General of Health Services, Ministry of Health and Family Planning, Government of India.

Table VI: Outlays on the Health Sector

(Rs. millions)

Plan	Centre	Centrally sponsored	State/Union Territories	Total	% of total plan outlay**
First Plan	138.0	—	871.0	1,009.0	4.98
Second Plan	900.0	—	1,838.2	2,378.2	4.58
Third Plan	148.3	54.6	2,055.7	2,255.6	2.60
1966-69	167.6	111.4	1,122.1	1,401.1	2.11
Fourth Plan	535.0	1,765.0	2,035.3	4,335.3	2.14
Fifth Plan	757.8	1,770.1	5,432.1*	7,960.0	2.13

* Inclusive of Rs. 291.47 crores for minimum needs programmes for States.

** Government of India, Central Bureau of Health Intelligence, Directorate General of Health Services, Ministry of Health and Family Welfare, *Pocket Book of Health Statistics of India, 1976*.

- SOURCES: 1. Government of India, Planning Commission, *Draft Fifth Five Year Plan, 1974-79, Vol. II*, India.
2. Government of India, Planning Commission, *First Five Year Plan, 1951*.
3. Government of India, Planning Commission, *Second Five Year Plan, 1956*.

Table VII: Health Care Services in India—Plans and Priorities

(In millions)

Plan priority programme	Allocation
I. 1 Water Supply and Sanitation	490.0
2 Primary Health Centres, Hospitals & Dispensaries	250.0
3 Control of Communicable Diseases	231.8
4 Education and Training	216.0
5 Family Planning	4.0
6 Indigenous System of Medicine	7.0
7 Other Schemes	202.0
II. 1 Water Supply and Sanitation	760.0
2 Control of Communicable Diseases	640.0
3 Primary Health Centres, Hospitals & Dispensaries	360.0
4 Education and Training	360.0
5 Indigenous System of Medicine	40.0
6 Family Planning	30.0
7 Other Schemes	60.0
III. 1 Water Supply and Sanitation	720.0
2 Control of Communicable Diseases	690.0
3 Primary Health Centres, Hospitals & Dispensaries	370.0
4 Education and Training	350.0
5 Family Planning	269.7
6 Indigenous System of Medicine	40.0
7 Other Schemes	50.0
IV. 1 Water Supply and Sanitation	4,970.0

2 Family Planning	3,009.3
3 Control of Communicable Diseases	1,270.0
4 Education and Training	982.0
5 Primary Health Centres, Hospitals & Dispensaries	882.9
6 Minimum Needs Programmes	764.9
7 Indigenous System of Medicine	158.3
8 Other Schemes	276.9
V. 1 Water Supply and Sanitation	10,220.0
2 Minimum Needs Programmes	2,914.7
3 Control of Communicable Diseases	1,686.1
4 Primary Health Centres, Hospitals & Dispensaries	1,552.8
5 Medical Education and Training	945.6
6 Indigenous System of Medicine & Homes	280.7
7 Training Programmes	172.0
8 Other Schemes	408.7

SOURCES: 1. Central Bureau of Health Intelligence, Directorate General of Health Services, Government of India, *Pocket Book of Health Statistics of India, 1976*.

2. Government of India, Planning Commission, *Draft Fifth Five Year Plan*, excluding Union Territories.

Table VIII: Per Capita Government Expenditure* on Health

Year	Per capita expenditure on health (Rs.)
1956	1.50
1961	2.35
1966-67	3.79
1973-74	7.72
1974-75	9.44
1975-76	10.63

*Includes expenditure by Central and State Governments.

SOURCE: Government of India, Central Bureau of Health Intelligence, Directorate General of Health Services, *Pocket Book of Health Statistics*.

Table IX: Hospitals and PHCs

	1950-51	1960-61	1971-72	1979
1. Number of hospitals* and dispensaries	8,600	12,000	14,438	17,607 (1977)
2. Number of PHCs	—	2,800	5,195	5,423
3. Number of sub-centres			32,218	40,124
4. Hospital beds	1,13,000	1,85,600	2,98,304@	4,49,212

* The number of hospitals is 6,168.

@ For 1970

SOURCE: Central Bureau of Health Intelligence, Government of India.

Table X: Health Facilities

	Oldest data	Latest data
1. Total No. of Medical Colleges	29 (1947)	106
2. Total No. of Dental Colleges	4 (1950)	15
3. Ayurvedic Colleges		93
4. Unani Colleges		12
5. Sidha College		1
6. Institutes Providing Diploma in Pharmacy Course		51
7. Hospitals and Dispensaries (Allopathic)	8,600 (1951)	15,257 (1974)
8. Hospitals in Indian System of Medicine		273
9. Number of Primary Health Centres	67 (I Five Year Plan)	5,423
10. Number of Sub-centres		40,124
11. Training Courses for Midwifery		244 (1974)
12. Training Courses for General Nursing	2	308 (1974)
13. Auxilliary Nurse Midwife Course		340
14. Health Visitors Course		24
15. Pharmacists (Degree and Postgraduate)		24
16. Dental Mechanic		5
17. Dental Hygienist		4
18. Dental Technician		2
19. Health Inspectors		8

	Oldest data	Latest data
20. Auxiliary Health Workers		—
21. Sanitary Inspectors		19
22. Laboratory Assistants		7
23. Laboratory Technicians		36
24. Leprosy Training Course for Paramedical Workers		5
25. Leprosy Assistant Training (Non-medical)		2
26. Leprosy Training Course		2
27. Occupation Therapy		3
28. Operation Theatre Assistant		5
29. X-ray Technician		15
30. Radiographers		14
31. Radiological Assistant		1
32. Dark Room Assistant		2
33. Optician & Refractioners		5
34. Orthopist		3
35. Compounders		32
36. Physiotherapy		8
37. Physiotherapy Technician		1
38. Multipurpose Basic Health (B.H.) Workers		2
39. Medical Attendant Training		20
40. Family Planning Training		6
41. Speech Hearing		2
42. Family Planning Extension Educator		1
43. Family Planning Field Worker		1
44. Medical Microbiology		1
45. Job Orientation for B.H. Workers		1
46. Job Orientation for Health Assistant		1

SOURCE: This data was collected for us by the Institute for Research in Medical Statistics, New Delhi.

Table XI: Health Personnel

	Oldest data	Latest data
1. Number of Doctors registered with State Medical Councils	47,500**	2,35,631 (1978)
2. Number of Dentists registered with the Dental Council of India	1,000**	7,419
3. Number of Homeopaths Registered/enlisted with Homeopathic Boards/Councils		46,619
(a) Qualified		22,919
(b) Experienced		81,599
(c) Enlisted		46,619
(d) Total		1,51,137
4. Number of Registered Practitioners of Indian System of Medicine		
(i) <i>Ayurveda</i>		
(a) Institutionally Qualified		1,19,361 (1978)
(b) Non-Institutionally Qualified		1,05,702 (1978)
(ii) <i>Unani</i>		
(a) Institutionally Qualified		10,269 (1978)
(b) Non-Institutionally Qualified		20,185 (1978)
(iii) <i>Sidha</i>		
(a) Institutionally Qualified		1,559 (1978)

	Oldest data	Latest data
(b) Non-Institutionally Qualified		16,569 (1978)
5. (a) Number of Nurses	7,000**	1,20,401 (1977)
(b) Number of <i>Dais</i>	2,617* (1951)	
6. Number of midwives		1,18,533 (1977)
7. Auxiliary Nurse Midwives	5,000**	55,656 (1977)
8. Health Visitors	750**	7,618 (1977)
9. Number of Pharmacists Registered by the State Pharmacy Council	75**	1,07,452 (1978)

SOURCE: 1. **Health Statistics of India* (Years 1951, 52 & 53) issued by the Directorate General of Health Services, Government of India, Ministry of Health.

2. ***Report of the Health Survey & Development Committee*, (1946), Vol. IV, Summary, Govt. of India, New Delhi.

Appendix Three

Background Papers Prepared for the Committee

Authors	Titles of the papers
1. Dr. R.S. Arole Director Comprehensive Rural Health Project Jamkhed 413 201 & Dr. N.S. Deodhar Director All India Institute of Hygiene and Public Health (AIHH & PH) 110 Chittaranjan Avenue Calcutta 700 073	Health Education in the Context of Tradition
2. Mrs. Srilatha Batliwala Research Officer Foundation for Research in Community Health 84-A, R.G. Thadani Marg Worli Bombay 400 018	Hunger and Health
3. Mrs. Srilatha Batliwala (Address as above)	Historical Development of Health Services

Authors	Title of the papers
4. Dr. A.K. Chakraborty Professor of Epidemiology AIHH & PH Calcutta 700 073	Communicable Diseases Control
5. Dr. Mrs. B.J. Coyaji Director K.E.M. Hospital Sardar Mudaliar Road Rastha Peth Pune 411 011	Family Planning Policy 1979-1999
6. Dr. N.S. Deodhar Director All India Institute of Hygiene and Public Health Calcutta 700 073	Primary Health Care
7. Dr. P.R. Dutt M-18 Green Park New Delhi 110 016	Survey of all Literature on Health Reforms in India (1946-1980)
8. Dr. B.B. Gaitonde Formerly Director Haffkine Institute Acharya Donde Marg Bombay 400 012	The Pharmaceutical Industry in India—Retrospects and Prospects
9. Dr. C.R. Krishnamurthy Director Industrial Toxicology Research Centre Lucknow 226 001	Health Implications of Industrial Development
10. Dr. S. Kulkarni Indian Council of Social Science Research IIPA Hostel Indraprastha Estate New Delhi 110 002	Basic Statistics Relating to Health in India

Authors	Title of the papers
11. Dr. P.K. Mukherjee Professor of Health Administration AIIH & PH Calcutta 700 073	Education and Training of Health Workers
12. Mr. V.G. Panwalkar Head Department of Urban & Rural Community Development Tata Institute of Social Sciences Sion-Trombay Road Bombay 400 088	Community Dimension in Health Care
13. Dr. Mrs. Lois Philip Associate Professor of Health Education AIIH & PH Calcutta 700 073	Health Education in India
14. Dr. V. Ramalingaswami Director-General Indian Council of Medical Research Ansari Nagar New Delhi 110 016	Medical Education
15. Dr. S. Subba Rao Professor of Sanitary Engineering AIIH & PH Calcutta 700 073	Comprehensive Plan for Water Supply and Envir- onmental Sanitation for the Country for the Next Two Decades
16. Dr. V.N. Rao Formerly Deputy Director-General	Medical Research

Authors	Title of the Papers
Indian Council of Medical Research "Arunoday" 31 Vishrambag Society Senapati Bapat Road Pune 411 016	
17. Dr. N.J. Sethna Professor of Maternal & Child Health AIIH & PH Calcutta 700 073	Maternal and Child Health Services
18. Miss V. Subhadra Assistant Professor of Public Health Nursing AIIH & PH Calcutta 700 073	Development of Nursing Services in India
19. Mr. Tarlok Singh Formerly Member, Planning Commission 110 Sunder Nagar New Delhi 110 003	Key Role of Linkages between Community Health and other Sectors of Rural Development
20. Dr. Carl E. Taylor Professor School of Hygiene & Public Health Johns Hopkins University 615 North Wolfe Street Baltimore, Maryland 21205 U.S.A.	Priority Issues in Commu- nity Oriented Implement- ation of Rural Health Services
21. Dr. Carl E. Taylor (Address as on the previous Page)	Comment on Contributions of the Bhore Committee Plan to the Health Services of India

Authors	Title of the papers
22. Dr. K.N. Udupa Emeritus Professor, Medical Faculty, Banaras Hindu University Varanasi 221 005 & Dr. R.H. Singh Institute of Medical Sciences Banaras Hindu University Varanasi 221 005	Utilisation of Indigenous Systems of Medicine in National Health Pro- grammes

Appendix Four

Names and Addresses of Members of the Committee

- | | |
|--|---|
| 1. Dr. N.H. Antia
Director
Foundation for Research
in Community Health
84-A R.G. Thadani Marg
Bombay 400 018 | 5. Dr. N. Jungalwalla
A 2/2 Safdarjang Enclave
New Delhi 110 016 |
| 2. Dr. R.S. Arole
Director
Comprehensive Rural
Health Project
Jamkhed 413 201 | 6. Mr. C.R. Krishnamurthi
Administrative Officer
WHO Development
Programmes
B-16 Gitanjali Enclave
New Delhi 110 017 |
| 3. Dr. Banoo J. Coyaji
Director
K.E.M. Hospital
Sardar Mudaliar Road
Rasta Peth
Pune 411 011 | 7. Prof. J.P. Naik
Indian Institute of
Education
128/2 Karve Road
Kothrud, Pune 411 029 |
| 4. Dr. N.S. Deodhar
Director
All India Institute of
Hygiene & Public Health
(AIHH & PH)
110 Chittaranjan Avenue
Calcutta 700 073 | 8. Dr. V. Ramalingaswami
Director-General
Indian Council of Medical
Research
Ansari Nagar
New Delhi 110 016 |
| | 9. Dr. V.N. Rao
"Arunoday"
31 Vishrambagh Society
Senapati Bapat Marg
Pune 411 016 |

10. Dr. B. Sankaran
Director-General of Health
Services
Ministry of Health
Government of India
Nirman Bhavan
New Delhi
11. Dr. Narottam Shah
Director
Centre for Monitoring
Indian Economy
110-118 Kaliandas Udyog
Bhavan
Worli
Bombay 400 025
12. Dr. B.N. Sinha
President
Medical Council of India
9 A.P. Sen Road
Lucknow
13. Miss V. Subhadra
Assistant Professor of
Public Health Nursing
AIHH & PH
110 Chittaranjan Avenue
Calcutta 700 073
14. Dr. K.N. Udupa
Emeritus Professor
Medical Faculty
Banaras Hindu University
Varanasi 221 005

Index

- ADMINISTRATION, Health 200-01
 13, 49, 56, 59, 75-76, 92-93,
 108, 110, 112-13, 116-18,
 120-21, 196, 197-201, 212, 222
 Central Level 75-76, 168-73,
 196, 198, 221-22
 Bureau of Health Edu-
 cation 75-76
 Medical and Health Edu-
 cation Commission 168-73,
 196, 198, 221
 Coordination (All level Ser-
 vices) 200-01
 Information Retrieval 200,
 223
 Local Level
 Panchayati Raj Institu-
 tions 49, 92-93, 108, 110,
 112-13, 116-18, 120-21,
 222
 Gram panchayats 108,
 110, 116-17
 Zilla Parishads 108, 110,
 116-17, 120-21
 Referral Services 199-200,
 223
 State Level 13, 75-76, 196,
 198, 200-01, 222
 State Health Education
 Bureaux 75-76
 State Health Deptts 13, 200-01
 And Voluntary Organisations
 56, 59, 197, 222
 Adult and Continuing Educa-
 tion 8, 24-25, 27, 42-43, 70, 72,
 110, 134, 214
 Agra 63, 187
 All India Council of Technical
 Education 170
 All India Institute of Hygiene
 and Public Health 167
 Alma Ata Declaration 12
 Alternative Health Services
 Model *See* Medical and Health
 Services Model (Proposed)
 Andhra Pradesh
 Filariasis 148
 Anemia 39, 48-49, 186
 Ashram Concept (of Life) 96
 Asian Health Charter 12
 Assam
 Japanese Encephalitis 150
 Auxiliary Nurse Midwives
 (ANM) 107, 115, 122, 157,
 160, 236t, 239t
 Ayurvedic System of Medicine
 99, 236t, 238t
 BCG 138, 143-44
 Backward Class Commission
 (1956) 56

- Drainage and Sewerage 56
- Balwadis 134
- Banaras Hindu University 99
 - Medical & Health Personnel Training
 - Indigenous System of Medicine 99
- Bengal Chemical and Pharmaceuticals Works 175
- Bhore Committee (1946) 91, 95, 101, 123, 187
- Bihar 18, 56, 146, 150
 - Diseases
 - Communicable
 - Japanese Encephalitis 150
 - Leprosy 146
 - Drainage and Sewerage 56
 - Mortality and Morbidity 18
 - Blindness and Blinds 48
 - Bombay 64
 - Bronchitis 5
- CALCUTTA 64
- Cancer 153, 177, 191
- Cardiology and Cardiac Surgery 165
- Cardio-vascular 153
- Central Health Bureau 217
- Central Research Institute, Kasauli 151-52
- Child-Care 105, 136-37, 139
- Children's Health Status
 - 4, 6, 9-10, 18, 38-39, 42, 44-46, 50, 52, 69-70, 131-40, 206-11, 215, 219, 223
 - Health Education 69-70
 - Historical Background 131-33
 - Improvement Programmes 133-40
- ICDS Scheme 50
 - Mortality and Morbidity 4, 10
 - Infant Mortality 4, 21, 29, 38, 131, 133, 212, 230t
 - Nutrition 38, 42, 44-46, 50-52
 - Breast-Feeding 45, 215
 - Malnutrition 6, 42
 - MCH Services 9, 132-40, 219
 - Mid-Day Meals 50, 70
 - Weaning 45, 115
- China
 - Mortality and Morbidity 4, 18
 - Cholera 4, 7, 141-41, 151-52, 187-88
 - Committee on Drugs and Pharmaceuticals Industry (Chairman : Hathi) Report 176-77, 183-85
 - Community Creches 134
 - Community Health Centre (CHC) 119, 84-90, 100, 103, 108, 110-17, 119-22, 126, 160-61, 164-66
 - Hospitals 86-88, 114
 - Location 108
 - Medical and Health Personnel 115-16
 - Community Health Visitors (CHV) 72, 74, 77, 85, 88, 91, 94, 98, 104-09, 111-14, 119, 125-26, 135, 137, 143, 147, 159-61, 163, 167, 198, 204, 210-20
 - Compulsory Primary Education 8, 19, 24-25, 27, 43, 134, 214
 - Constitution of India 3, 32, 206

- Cooking and Dietary Practices 6, 25, 42-44, 68
- Cuba
 - Mortality and Morbidity 4, 18
- Curriculum 162-64, 168
 - Medical and Health Personnel Training
 - Medical Practitioners 162-64
- DDS 146
- DDT 145
- DPT 138
- Dais 74, 77, 107, 111, 135-36, 139, 219, 239t
- Damodar 63
- Delhi 63
- Dental Council of India 171
- Dengue 188
- Diarrhoeal Diseases 7, 38, 73, 83, 141-45, 152
- Diphtheria 64, 67
- DISEASES 4-7, 9-10, 18, 38, 60, 64, 67, 73, 85, 94, 106, 109-10, 114, 138, 177-78, 186-88, 191, 219-20, 233-34t
 - Communicable 9-10, 142-43, 151-52, 196, 219-20
 - Cholera 4, 7, 141-42, 151-52, 187-88
 - Diarrhoeal Diseases 7, 38, 73, 83, 141-43, 152, 219-20
 - Diphtheria 64, 67, 141, 146, 152, 220
 - Filariasis 5, 7, 83, 141, 148-49, 152-53, 186, 219-20
 - Guinea-Worm Diseases 5, 60, 141, 149, 152, 220
- Hydrophobia 141, 147, 152, 220
- Japanese Encephalitis 147-50, 188, 219
- Leprosy 5, 7, 85, 94, 106, 109-10, 114, 141, 146-47, 152-53, 178, 186, 188, 219-20
- Malaria 4-6, 18, 60, 85, 106, 109-10, 141-142, 144-45, 151-53, 186-88, 219-20
- Plague 141-42, 152, 188
- Poliomyelitis 4, 138, 141, 147-48, 152, 219
- Small Pox 4, 141-42, 152
- Tetanus 4-5, 7, 138, 141, 145-46, 152, 220
- Tuberculosis 5-7, 85, 94, 106, 109-10, 114, 141, 143-44, 147, 152, 178, 186, 188, 219-20
- Disease Control Programme 150-52, 233-34t
 - Coordination 151-52
 - National Information System 150-51
- Non-Communicable
 - Cardio-Vascular 153
 - Cancer 153, 177, 191
 - Heart Diseases 153, 177, 191
 - Mental Health Disorders 153-54
 - Occupational Health Hazards 153-54
 - Workers, Agricultural 154
 - Workers, Industrial 154
- Dharamsalas 87-88, 114, 121-22
- District Health Centre (DHC)

- 88-90, 92, 100, 110, 115, 117, 120-23, 160, 164-66
 District Tuberculosis Organisations 143
 Drainage and Sewerage 5, 7, 24, 56-62, 65, 149
 Cities 56-62, 65, 216
 Villages 58-59, 149
 Night Soil Disposal 60, 216
 Drugs and Pharmaceuticals 10, 13, 15, 83, 90-92, 96, 101, 175-86, 221-22
 Drug Consumption 179, 184-85
 Drug Policy 176-77, 180-81, 185-86, 221
 National Drug Policy 185, 221
 National Drug Authority 185, 221
 Drug Production
 Foreign Industries 177, 180-81, 183, 221
 Indian Industries 91-92, 176, 178, 180-82
 Committee on Drugs and Pharmaceuticals Industry 176, 183, 185
 Cooperative Sector 181
 Private Sector 178
 Public Sector 176, 180-81
 Small Sector 180-81
 Village Level 181-82
 Pattern 177-82, 186
 Basic Drugs 179, 181-82, 186, 221
 Irt Diseases 177-79, 181
 Price Control 182-83 221
 Price Control Order 182
 Price Reduction Measures 192-83
 Quality Control 184, 221
 Experiments and Research 177, 183-84, 221
 Dysentery 141, 186
 EDUCATION 8, 22, 134
 Education, Ministry of 27
 Adult Education 27
 Education Commission 102
 Expenditure on Education 102
 Employment 6, 24-26, 40, 43, 45, 47, 134, 214-15
 Scheduled Castes 43
 Women 43, 45, 47, 134, 214-15
 Workers, Agricultural 43
 Environment 5, 7, 9, 11-12, 18, 24-26, 43, 53-66, 122, 149, 190 213, 216, 223
 Cities 5, 12, 18, 26, 53-65, 122, 190, 216
 Housing and Settlement 5, 12, 18, 24, 26, 53, 61-62, 65, 214, 216
 Low-cost Houses 62
 Pollution 62-64, 216
 Air 63-64, 190, 216
 Soil 62-63
 Water 63, 64, 190, 216
 Sanitation
 Drainage and Sewerage 56-62, 65, 216
 Solid Wastes Disposal 57-59, 216
 Basket Latrine 58, 216
 Water-Seal Latrine 58-59, 216
 Water Supply 53-55, 59,

- 122, 216, 223
 Irt Industries 64-65, 216
 Work-Place Environment 64, 216
 Villages 58-61, 122, 149, 216
 Housing and Settlement 61, 216
 Irt Scheduled Castes 61, 216
 Sanitation 59-61, 216
 Drainage and Sewerage 58-59, 149
 Night-Soil Disposal 60, 216
 Water Supply 53-55, 122, 149, 216, 222-23
 Epidemiology 123, 163, 166-67, 190
 Erode 63
 Experiments and Research 9, 13, 123, 145, 149, 169, 187-92, 222
 Clinical and Basic 191-92, 222
 Diseases
 Communicable 145, 149, 187-88, 190, 222
 Cholera 187-88
 Dengue 188
 Diarrhoeal 190, 222
 Filariasis 149
 Japanese Encephalitis 188
 Kala Azar 187-88
 Leprosy 188
 Malaria 145, 187-88
 Non-Communicable
 Cancer 191
 Heart Diseases 191
 Drugs and Pharmaceuticals 190-91
 Herbal Gardens 190
 Indigenous Medicine 190-91
 Economics of Health 190
 Family Planning 191
 Contraception 191
 Finance 188-89
 Environment 190-91, 222
 Pollution 191
 Work-Place Environment 191
 Sanitation 190, 222
 Villages 222
 Night Soil Disposal 190
 Water Supply
 Villages 190
 Historical Background 187
 Indigenous System of Medicine 191
 Information Retrieval 189, 196
 and Mudaliar Committee Report 187-88
 Nutrition
 Food 190
 Consumption 190
 Distribution 190
 Production 190
 Primary Health Care 189
 Sociology of Health 190
 Europe
 Environment—66
 FAMILY Planning 5, 7, 9, 11, 13, 21, 26, 28, 31-34, 70, 83, 104, 106, 110-11, 114, 126, 131, 133, 136-39, 191, 211, 213-15, 222, 233-34t, 237t
 Contraception 28, 31-33, 137, 191

- Experiments and Research 191
- Famine 4, 40, 51
- Filariasis 5, 7, 83, 148-49, 152-53, 186, 219-20
- Finance (Health-Care Services) 11, 117-18, 171, 201-05, 212, 223
- Expenditure
 - Changes (Expenditure Pattern) 203-4
 - Irt Drugs and Pharmaceuticals 204
 - Irt Health Care Services 203
 - Irt Medical and Health Personnel 203-04
 - Cities 202-03
 - Private Sector 201
 - Public Sector 201-02
 - Resource 204-05
 - Central 204
 - Five year Plans 171, 212, 232t
 - State 205
 - Local 117-18, 205
 - Local Health Cess 205
- Fisheries 49
- Floods 40, 51
- Food 5-6, 24-25, 38, 40, 41-43, 49, 52
 - Distribution 41, 43
 - Food Intake 38, 40, 49, 52
 - Production 5-6, 24-25, 41-43
 - Storage 6, 25, 43
- Food-for-work Programme 43
- GAMES and Sports 70, 97
- Gandhi, M.K. 37, 60, 72, 97-98
 - Food 37
- Health Education 72
- National System of Medicine 97-98
- Sanitation
 - Villages 60
- Gandhi Centenary Celebrations
 - Drainage and Sewerage 56
 - Ganges 63
 - Gardens 44, 49, 106, 190
 - Herbal 190
 - Kitchen 44, 106
 - School 49
- Gastroenteritis 5, 60, 85, 94, 178
- Gynaecology 165
- Goitre 39, 48
- Gram Panchayats 108, 110, 116-18
- Guinea Worm (Diseases) 60, 141, 149, 152, 220
- Gujarat 56
 - Drainage and Sewerage 56
- HATHI Committee Report
 - See Committee on Drugs and Pharmaceuticals (Chairman : Hathi) Report
- Health, Ministry of 11, 13, 152, 200-01
- Health Administration
 - See Administration, Health
- Health and Development 3-15
 - Current Health Situation 3-9
 - Achievements
 - Diseases
 - Communicable 6-7
 - Health-care Services 8-9
 - Mortality and Morbidity 4-5
 - Cities 6

- Villages 5
- Nutrition
 - Food Production 5-6
- Failures 6-7
- Diseases
 - Communicable 6-7
- Environment
 - Cities
 - Drainage and Sewerage 7
 - Pollution 7
 - Villages
 - Drainage and Sewerage 7
 - Water Supply 7
- Health-Care Services 8-9
 - Villages 9
- Health Education 7
- Mortality and Morbidity 4-5
 - Children 4-5
 - Women 4-5
- Nutrition 6
- Health and Democratic Decentralisation 25-26
- Health and Economic Development 17-19
 - Downward Filtration Theory 18
 - Poverty and Inequality 21-23
- Health and Family Planning 21, 26-32
- Health and Integrated Development 20-21, 23-25
- Health and Political Development 19-20
 - Irt Public Health Services 20
- Health and Social Development 19
- National Health Policy 10-15, 21-34
 - Different Dimensions
 - Educational 13
 - Environmental 12
 - Nutritional 12
 - Philosophical 12
 - Social 12
 - Objectives 13-15
 - Targets (by AD 2000) 212-13
- Health and Five Year Plans 171, 212, 232t
 - Fifth Five Year Plan 171, 232t
- Health Assistants 108, 220, 237t
- Health Education 10-11, 24-25, 45, 67-77, 139, 213, 216-17
- Channels and Agencies
 - Adult and Continuing Education 70-71
 - Pre-School 69
 - Primary 69-70, 217
 - Secondary 70, 217
 - University 70, 217
- Definition 67-69
- Irt General Education 69, 217
- Irt Medical and Health Personnel Training 71, 75-76, 217
 - Central Health Education Bureau 75-76, 217
 - State Health Education Bureaux 76, 217
 - Irt Patients 71-72, 217
 - Irt Poor and Underprivileged 72-75, 217
 - Teaching Aids 76
- Heart Diseases 153, 177, 191
- Hindustan Antibiotics Ltd

- (HAL) 175
 Hooghly 63
 Hospitals and Dispensaries 9, 31, 86-88, 114, 16, 121-22, 233t, 235t
 Housing and Settlements 5, 12, 18, 24, 26, 53, 61-62, 65, 214, 216
 And Health 61
 Low-Cost Houses 62
 Irt Scheduled Castes 61, 216
 Human Behaviour 163
 Hydrophobia, 141, 147, 152, 220
- IMMUNISATION**
 11, 45, 50, 82, 104, 106, 110, 114, 126, 136-38, 146, 148
 Indian Council of Agricultural Research (ICAR) 170
 Indian Council of Medical Research (ICMR) 144, 151-52, 188, 190, 222
 Diseases
 Communicable 144, 151-52
 Kala Azar 152
 Tuberculosis
 BCG 144
 Economics of Health 190
 Research Institutions 188
 Sociology of Health 190, 222
 Indian Council of Social Science Research (ICSSR) 47, 190, 222
 Economics of Health 190
 Sociology of Health 190, 222
 Women's Programmes 47
 Indian Drugs and Pharmaceuticals Ltd. 175
 Indian Institute of Education
- Case Study of Jaipur Foot 124f
 Indigenous System of Medicine 8, 81-82, 85, 98-99, 233-34t 236t, 238t
 Indigenous Medicine 98
 Irt National System of Medicine 98
 Infant Mortality 4, 21, 29, 38, 131, 133, 212, 230t
 Information Retrieval 189, 196
 Integrated Child Development Scheme (ICDS) 50
- JAIPUR FOOT** 124
 Japanese Encephalitis 147-50, 188, 219
 Jammu 63
- KALA AZAR** 152, 187-88
 Kanpur 63
 Karnataka
 Japanese Encephalitis 150
 Leprosy 146
 Keveri 63
 Kerala 5, 18, 44, 57, 133
 Drainage and Sewerage 57
 Filariasis 148
 Mortality and Morbidity 5, 18
 Infant Mortality 133
 Kwashiorkor 44
 Kyasanur (Forest Disease) 188
- LABOUR and Labourers**
 Accident Insurance 65
 Safety Measures 65
 Workers
 Agricultural 40, 43
 Industrial 64-65
 Leprosy 5, 7, 85, 94, 106, 109-

- 10, 114, 141, 146-47, 152-53, 178, 186, 188, 219-20
 Leprosy Institute, Chingleput 152
 Libraries 115, 167
- MAHARASHTRA**
 Diseases
 Filariasis 148
 Leprosy 146
 Pollution
 Air Pollution by Industries 146
 Mahe 63
 Mahila Mandals 31, 49
 Malaria 4-6, 18, 60, 85, 106, 109-10, 141-42, 144-45, 151-53, 186-88, 219-20
 Malaria Research Institute *See*
 National Institute of Communicable Diseases
 Malkani Committee
 Drainage and Sewerage 56
 Malnutrition *See* under Nutrition
 Mango 49
 Marasmus 44
 Mass Communication 118, 217
 Maternal and Child Health (MCH) Services 9, 132-40, 219
 Irt Medical and Health Services Model (Proposed) 134-38
 Priorities in MCH Activities 138-40
 Measles 5, 38
 Medical and Health Education Commission 168-73, 196, 198, 221
 Medical and Health Educators 74-75
- Medical and Health Personnel 8, 10, 13, 15, 72, 74, 77, 85, 88, 90-91, 94-95, 98, 104-16, 119, 122, 125-26, 135, 137, 143, 147, 155-73, 191, 198, 204, 209, 219-20, 236t, 239t
- Categories**
 Medical Practitioners 83, 90-91, 94-95, 111, 155-56, 161-65, 171, 198, 204, 209, 238t
 Nurses 107, 115, 122, 156-57, 160-61, 171, 220, 239t
 ANM 107, 115, 122, 157, 160, 236t, 239t
 Health Visitors 157
 Other Personnel
 CHV 72, 74, 77, 85, 88, 91, 94, 98, 104-09, 111-14, 119, 125-26, 135, 137, 143, 147, 159-61, 163, 167, 198, 204, 219-20
 MPW 74, 77, 88, 91, 108, 110-12, 114-16, 119, 125-26, 135, 137, 157, 159-60, 163, 198, 204, 219-20
 Paramedicals 157, 161, 171, 191, 198, 220
 Specialists 115, 165-66, 171, 198, 220
 Dentists 171, 238t
 Superspecialists 166, 198, 220
 Historical Background 155-157
 Promotion 119-20, 159
 CHC Personnel 119
 Recruitment 158-61

- CHV 119, 159
- MPW 160
- Paramedicals 161
- Salaries 119-20, 161-65, 220
- CHC Personnel 119
- Medical Practitioners 161-65, 220
- Service Conditions 156, 158-60, 165
 - Medical Practitioners 165
 - Nurses 156, 160
- Social Status
 - Nurses 156, 220
- Medical and Health Personnel
- In-Service Training 155, 159, 167-68, 221
- CHV 167
- Paramedicals 167
- Medical and Health Personnel Training 13, 15, 101, 122-23, 155-73, 220-21, 236-39t
- Categories
 - Medical Practitioners 156, 161-64, 221, 238t
 - Curriculum (Community-Oriented) 162-64
 - Collaboration with Health-Care Services 164
 - Field oriented 163
 - Inter-Disciplinary Approach 163
 - Nurses 122, 156-57, 160-61, 236t, 239t
 - ANM 160, 236t, 239t
 - Health Assistants 122, 237t
 - Other Personnel 159-61
 - CHV 159-61, 163
 - MPW 159-61, 163
 - Paramedicals 161
- Specialists 165-66, 220
- Superspecialists 166, 220
- Curriculum 168
- Duration 168
- Medical Practitioners 164
- Public Health 166-67
- Medical and Health Education Commission 168-73, 221
- Composition 170-71
- Medical and Health Councils 171-72
- Teaching-Learning Materials 167-68
- Teaching Methods 168
- Medical and Health Services Model (Proposed) 79-140
- Administration, Health
 - Community Participation 93-95
 - Panchayati Raj Institutions 92-93, 108, 110, 112-13, 116-18
 - Gram Panchayats (Village) 108, 110, 116-18
 - Panchayat Samities (Block) 108, 110, 112-13, 117-18
 - Zilla Parishads (Distt) 108, 110, 116-17
- Basic Approaches
 - Community-Based Services 84-86
 - Community Health Centre 84-90
 - Hospitals 86-88
 - Primary Health Centres 87-89
 - Drugs and Pharmaceuticals 90-92

- Drug Production 91-92
- Integration of Services 88-91
- Community Health Centre 89-90
- Sub-Centre 89
- Village Centre 89
- Medical and Health Personnel
 - CHV 85, 88, 91, 94, 98
 - MPW 88, 91, 94
 - Medical Practitioners 90-92
- National Orientation
 - Ashram Concept of Life 96
 - Community Participation 93-95, 97
 - Indigenous System of Medicine 98-99
 - National System of Medicine 96
 - Naturopathy 97
 - Non-Consumerist Approach 96-97
 - Yoga 97
- Existing Services Model
 - Cities 82-83
 - Irt Indigenous System of Medicine 81-82
 - Villages 82-83
- Finance 99-102
- Expenditure
 - Administration 101
 - Experiments and Research 101
 - Levels
 - Population of 1000 (Village) 100
 - Population of 5,000 (Sub-Centre) 100

- Population of 100,000 (CHC) 100
- Population of 10,00,000 (DHC) 100
- Population of 50,00,000 (Specialist Centre) 100
- Medical and Health Personnel Training 101
- Organisation (Health Services) 103-27
- Population of 1,000 (Village), 103-10
- Health Education 110
- Medical and Health Personnel
 - ANM vs Dais 107
 - CHV 104-08
 - Medical and Health Personnel Training 107-08
- Referral Service 108
- Village Health Committees 108
- Population of 5,000 (Sub-Centre) 110-12
- Medical and Health Personnel
 - Health Assistants 108, 112
 - MPW 110-12
- Medical and Health Personnel Training
 - MPW 112
- Irt Primary Health Centre 111
- Population of 1,00,000 (CHC) 112-20
- Administration 116-20
- Panchayat Samitis 117-18
- Finance 116-20

- Health Services
 - Preventive 113-14
- Hospitals 114-16
 - Dharamsalas* 114-15
- Medical and Health Personnel 115
 - Categories 115-16
 - Promotion 119-20
 - Salaries 120
 - Transfer 119-20
- Population of 10,00,000 (DHC) 120-22
 - Hospitals 121-22
 - Dharamsalas* 121
 - Medical and Health Personnel 121-22
 - Medical and Health Personnel Training 122
 - Medical Colleges 122
 - Nursing and Health Schools 122
- Population of 50,00,000 (Specialist Centre) 122-23
 - Epidemiology Bureau 123
 - Experiments and Research 123
 - Health Care Delivery 123
 - Medical and Health Personnel Training 123
- Rehabilitation Services (Physically Handicapped) 124-25
- Specific Groups 125-26, 131-40
 - Children's Health Status (*See also* main hdg. Children's Health Status) 131-40
 - City-Dwellers 125-26
 - Women's Health Status (*See also* main hdg. Woman's Health Status) 131-40
 - Medical and Health Training Institutions 99, 101, 120, 123-24, 155-56, 161-63, 196, 204, 236t
 - Categories
 - Ayurvedic Colleges 99, 236t
 - Medical Colleges 120, 155-56, 161-63, 204, 236t
 - Nursing Schools 120, 122
 - Sidha Colleges 236t
 - Specialist Institutes 123-24
 - Unani Colleges 236t
 - Expenditure 101
 - Medical Council of India 171
 - Medical Colleges 120, 155-56, 161-63, 204
 - Medical Practitioners 83, 90-91, 94-95, 111, 155-56, 161-65, 171, 198, 204, 209, 221, 238t
 - Medical Research *See* Experiments and Research,
 - Mental Health Disorders 153-54
 - Mettur 63
 - Mid-day Meals 50, 70
 - Mortality and Morbidity 4-5, 9-10, 18, 21, 27, 32, 37-38, 41, 212, 229t
 - Birth rate 27, 212, 229t
 - Death rate 27, 212, 229t
 - Children
 - Infant Mortality 4, 21, 29, 38, 131, 133, 212, 230t
 - Woman 4, 10, 132
 - Mudaliar Committee 187-88
 - Experiments and Research 187

- Diseases
 - Communicable 187-88
- Multi-purpose Workers (MPW) 74, 77, 88, 91, 108, 110-12, 114-16, 119, 125-26, 135, 137, 157, 159-60, 163, 198, 204, 219-20
- NATIONAL Commission on Labour (1969) 64
- National Committee on Science and Technology (NCST)
 - Task Force on 178
- National Committee on Status of Women 47
- National Council for Nursing 157
- National Drug Authority 185, 221
- National Health Service 205-06
 - Irt Private Practice 205-06
- National Information Retrieval 151, 196
 - Objectives 151
- National Institute of Communicable Diseases 151
- National Institute of Nutrition, Hyderabad 40
- National Institute of Prosthetic and Orthotic Training (Orissa) 124
- National Institute of Virology 150
 - Japanese Encephalitis 150
- National Leprosy Control Programme 146-47
- National Malaria Control Programme 144
- National Policy on Health 11, 14, 18, 189
- National Programme Against Hydrophobia 147
- National Sample Survey of India 56
 - Survey on Sewerage Services in Cities 56
- National Smallpox Eradication Programme 141
- National System of Medicine 97-98, 169
- Naturopathy 97
- Nehru, Jawaharlal
 - National System of Medicine 97-98
- Nephrology and Urology 165
- Net Production Rate (NPR) 26, 33
- Neurology and Neuro Surgery 165
- Nurses and Midwives 107, 115, 122, 156-57, 160-61, 171, 220, 239t
 - Auxiliary Nurse Midwives 107, 115, 122, 157, 160, 236t, 239t
- Nursing Council of India 171
- Nutrition 11, 18, 25, 37-52, 67, 137, 139, 152, 163, 187, 190, 213, 215-16
 - Experiments and Research 190
 - Irt Health 37-39
 - Malnutrition 6, 9, 38-42
 - Causes 40-42
 - General
 - Special Form
 - Anemia 39, 48
 - Goitre 39, 48
 - Vitamin-A Deficiency 38
 - Nutritional Improvement Programmes 42-51
 - General 37-38, 42-44
 - Employment 43
 - Food 37-43, 215

- Distribution 41, 43, 215
- Production 41-42, 215
- Storage 43, 215
- Nutritional Education 43-44
- Special 38, 44-51
- Applied Nutritional Programme for Children 38, 42, 44-46, 51
 - Breast-Feeding 45-46
 - Child Care 45-46
 - Diets 46
 - Weaning 45-46
- Integrated Child Dev. Scheme 50
- Mid-day Meals 50-51
- Programme for Specific Groups
 - Anemia 48
 - Goitre 48
 - Vitamin-A
- Programme for Women 38, 42, 46-47, 49, 51
 - Education 47
 - Employment 43, 47
 - Lactating Mothers 38, 46-47
 - Pregnant Mothers 38, 46-47, 49
- ORISSA
 - Leprosy 146
- PAEDIATRICS 121, 165
- Panchayat Samitis 108, 110, 112-13, 117-18
- Panchayati Raj Institutions 49, 92-93, 108, 110, 112-13, 116-18, 120-21
 - Irt Administration, Health 49, 92-93
- Gram Panchayats 108, 110, 116-17
 - Health Committees 116-17
 - Panchayat Samitis 108, 110, 112-13, 117-18
 - Zilla Parishads 108, 110, 116-17, 120-21
- Papaya 49
- Pasteur Institute, Coonoor 152
- Patna 57
- Pharmacy Council of India 171
- Physical Education 70
- Plague 141-42, 152, 188
- Planning Commission 26, 178, 232t
- Population 26
- Task Force on Drug Production 178
- Poliomyelitis 4, 138, 141, 147-48, 152
- Pollution 7, 12, 53, 57, 62-65, 190, 216
 - Air 63-64, 216
 - by Industries 64, 190
 - Soil 62-3
 - Water 63-64, 190, 216
 - By Industries 63-64, 190
 - By Rivers 63
- Population 23, 27, 29, 132, 163, 213-215, 231t
 - National Population Commission 29, 215
 - Sex Ratio 23, 132, 231t
 - Working Group on Population Policy (1980) 26-32
- Poultry 49
- Primary Education 24-25, 27, 43, 70, 134, 214
 - Compulsory Primary Education 8, 19, 24-25, 27, 43,

- 134, 214
- Primary Health Care 20, 158, 185-89
- Primary Health Centre 9, 82-83, 87-89, 111, 114, 136 233-36t
- Professional Organisations, Health 168
- Protein-Calorie Malnutrition (PCM) 39-40
- Pneumonia 5
- Punjab 18, 136
 - Mortality and Morbidity 18
- RABIES 7
- Rajasthan 18
 - Mortality and Morbidity 18
- Ranchi 57
- Rehabilitation Services (Physically Handicapped) 124-25, 220
 - Jaipur Foot 124
 - Specialist Centre 125
- Roy, P.C.
 - Bengal Chemical and Pharmaceutical Works 175
- SANITATION 4-5, 12, 18, 43, 50, 56-62, 70, 82, 104, 143, 149, 152, 190, 222-23, 233-34t
 - Cities 56-62, 65
 - Drainage and Sewerage 56-62, 65
 - Solid Wastes Disposal 57-59
 - Basket Latrine 58
 - Water-Seal Latrine 58-59
 - Villages 59-61, 70, 149, 222
 - Drainage and Sewerage 149
 - Night Soil Disposal 60
- Scheduled Castes and Tribes 6, 23, 40, 55, 61, 136, 206, 214
 - Castes 6, 23, 40, 55, 61, 136 206
- Tribes 6, 23, 40, 206
- Sethi, P.K.
 - Jaipur Foot 124
- Sex Education 70
- Sidha System of Medicine 236t 238t
- Slum Dwellers 40, 58
- Smallpox 4, 141-42, 152
- Sociology 163
- Specialists 115, 165-66, 171, 198, 220
- Sri Lanka
 - Mortality and Morbidity 4, 18
- Srivastava Committee Report
 - Medical and Health Education Commission 168-73, 196, 198
- Specialist Centres 100, 122-23, 125
- State Health Bureaux 75-76, 217
- State Health Departments 13, 200-01
- Sukhatme, P.V. 40, 43
 - Cheap Canteens Scheme 43
 - Nutrition 40
- Sulabha Shauchalaya Sansthan 56
- Superspecialists 166, 198
- Supervision and Supervisors, Health 118-19
- Sweden 4
 - Infant Mortality Rate 4
- TAMIL NADU
 - Diseases
 - Filariasis 148
 - Leprosy 146
 - Drainage and Sewerage 57
 - Teacher Education 70
 - Tetanus 4-5, 7, 138, 141, 145-46, 152, 220
 - Thailand

- Mortality and Morbidity 4
- Tubectomy 30, 163
- Tuberculosis 5-7, 85, 94, 106, 109-10, 114, 141, 143-44, 147, 152, 178, 186, 188, 219-20
- UNANI System of Medicine 236t, 238t
- United Kingdom (UK) 66
 - Environment 66
- United States (U.S.) 66
 - Environment 66
 - Infant Mortality 4
- Universal Elementary Education
 - See Compulsory Primary Education
- University Grants Commission 169-70
- Uttar Pradesh 5, 18, 148, 150
 - Diseases 148, 150
 - Filariasis 148
 - Japanese Encephalitis 150
 - Mortality and Morbidity 5, 18
- VILLAGE Level Workers 137
- Vocational Education 24-25, 214
- Voluntary Organisations 56, 59, 197
 - Drainage and Sewerage 56, 59
- WATER Supply 4-5, 12, 18, 24, 43, 53-55, 104, 122, 149, 152, 190, 216, 222, 233-34t
 - Cities 53-55, 59, 122, 216
 - Villages 53-55, 122, 149, 216, 222
- West Bengal
 - Leprosy 146
- Whooping Cough 4-5
- Women's Health Status 4, 6, 10, 18, 24-25, 29-30, 38-39, 42-47, 73, 105, 123, 131-40, 206, 214-15, 223
 - Breast Feeding 45, 137, 215
 - CHV 105, 135, 137
 - Community Creches and Balwadis 134
 - Delivery Services 123, 135-39
 - Employment 43, 45, 47, 134, 214-15
 - Education 29, 47, 134
 - Health Education 45-46, 73, 139
 - Immunisation 136-38
 - Maternity and Child Health Services 9, 132-40, 219
 - Mortality and Morbidity 4, 10, 132
 - Nutrition 138, 42, 44-47, 49, 51, 137-38
 - Malnutrition 6, 24, 30, 42, 44-45
 - Pregnancy 38, 46-47, 49, 73, 105, 136, 138
 - Raising Age of Marriage 18, 134
- Work-Place Environment 64, 191
- Work Experience 24-25
- Working Group on Population Policy (1980) 26, 32
- World Health Organisation (WHO) 144
 - BCG 144
 - Malaria Control 144
- YOGA 97
- Youth Clubs 31
- Yuvak Mandals 49
- ZILLA Parishads 108, 110, 116-17